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THE UNIVERSITY OF ALBERTA  
THE PROCESS OF RURAL SETTLEMENT IN THE  
ATHABASCA AREA, ALBERTA

by



DONALD NORMAN GEORGE STONE

A THESIS

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The undersigned certify that they have read,  
and recommend to the Faculty of Graduate Studies for  
acceptance, a thesis entitled "The Process of Rural  
Settlement in the Athabasca Area, Alberta" submitted  
by Donald Norman George Stone in partial fulfilment of  
the requirements for the degree of Master of Arts.



## ABSTRACT

This study is concerned with determining which spatial and/or environmental factors had the greatest influence on the process of agricultural colonization in part of north-central Alberta. A random sample of 129 quarter-sections (approximately 10 per cent) was selected from a 324 square mile area for the colonization analysis.

Historical homestead data were obtained from the homestead files at the Alberta Government's Department of Lands and Forests, Edmonton, the original vegetative cover and land use for 1922 from the Dominion Land Surveyors' Notebooks at the Alberta Government's Department of Highways, Edmonton, the soil data from the Alberta Institute of Pedology, Edmonton, the 1949 and 1969 general land use data and farmstead data were interpreted from air photographs (and field checks for 1969). Introductory background material was collected from the Northern News, for the period 1909 to 1914. Unpublished personal papers were also used and personal interviews were conducted with Athabasca district pioneers.

The existence of Athabaska Landing as one of the primary transshipment and distribution depots for the northern fur trade in the late nineteenth century, the presence of a major overland route (the Edmonton-Athabaska Landing Trail), and the existence of a network of wagon roads and trails created an ideal situation for analyzing the importance that distance from these cultural features had upon the rural colonization process throughout the initial rural settlement period (1904-15). Home-



stead entry dates were converted to numerical values ("number of days ago") and correlated linearly with distance to the cultural features. There was a positive relationship between time of initial homestead entry and all the distance variables. However, distance to the nearest railway depot and to the nearest wagon road or trail showed stronger correlations.

Of the two environmental variables considered, type of vegetative cover was more important in terms of initial homestead location than type of soil. Those quarter-sections bearing a greater acreage of scrub-covered vegetation tended to be settled first. The relationship between the time of initial homestead entry and the number of acres of scrubland was the strongest association discovered of all the spatial and environmental variables considered. A rank-order correlation on the soil data indicated a positive but weak correlation with time of initial homestead entry, indicating that the better soils (chernozems) were not necessarily chosen first.

Relationships between age structure and ethnic and marital backgrounds of the initial homesteaders revealed that the younger single men tended to patent land sooner than the married entrants, that the Canadian and British-born tended to enter earlier than the American and European-born and therefore selected the better land (scrubland) first.

Since the Second World War the study area has experienced rural depopulation, farmstead abandonment and an increase in cultivated acreage.



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## CHAPTER I

### INTRODUCTION

#### The Problem

Rural settlement themes have occupied an important position in geographic studies. In the past, the processes, patterns and forms of initial human occupance and subsequent readjustment through time have tended to be descriptive in character. Traditional rural settlement studies have focused upon the uniqueness of certain areas or regions. In recent years some theoretical models for rural settlement have been formulated. Bylund (1960) proposed four theoretical models on the process of rural colonization following investigations into settlement processes in Lappland, Sweden. Assuming the environmental conditions were constant, Bylund constructed two basic models in which he theorized that rural colonization penetrated either radially, or concentrically outwards from an established centre. Bylund's investigations of rural settlement in Lappland led him to construct a rural settlement model which contained elements of the two basic theoretical constructs: radiating and concentric movement of rural settlers outwards from established centres. Although Bylund's clone-



colonization model was based on the penetration of settlement by the "sons of the first pioneers and then their sons, generation after generation" (1960), the concepts of radiating and concentric rural settlement penetration from established centres are worthy of examination in a Canadian setting.

In a recent publication, Hudson (1969), proposed a theory of rural settlement location in which he outlined three phases of the rural settlement process--colonization, spread and competition. The colonization stage is "associated with the dispersal of settlement into a new territory, or a new environment, or into an unoccupied portion of an old environment" (Hudson, 1969, p. 367). Spread was determined by the increase in the population density and evolution of a number of settlement clusters. The third phase, competition, was the final phase in which population growth and population density were reduced. Farm holdings undergo consolidation and a few urban clusters tend to increase in size and absorb the trading areas of the smaller centres.

It is the purpose of this study to analyze, in some detail, the process of rural settlement within a specified area of north-central Alberta. Although no attempt will be made to investigate thoroughly the theoretical concepts espoused by Hudson, the study will consider the two basic rural settlement concepts illustrated by Bylund.

Hudson's colonization phase, which involves the occupancy of an uninhabited area within a given period of time,



will be analyzed. The spread of agricultural settlement will be shown in terms of extension of cultivated acreage throughout the chosen study area. Competition, as a phase of the rural settlement process, will be briefly analyzed in terms of population trends and farmstead abandonment through time. However, the study will focus principally upon the colonization phase of the rural settlement process.

A number of pertinent physical and distance variables have been chosen to test whether there were any general patterns or trends established during the process of occupying an uninhabited area. The identification and evaluation of all factors operative in the rural settlement process of any area is obviously not feasible. The number of individual reasons for land selection were likely as varied as the number of incoming settlers. None the less, there is merit in selecting some relevant variables that would hopefully shed some light on the process of colonization within a selected area of Western Canada.

The physical variables that were chosen as representative of the physical environment were the size and density of the vegetative cover prior to agricultural intrusion, and the nature of the soil based on a recent scientific survey. The quality of the soil and the nature of the vegetative cover were constantly cited by early agricultural promoters as important aspects for settler consideration. Although the general topography and drainage conditions are outlined



for the entire study area, they have not been used as indices for settlement analysis. In many respects, the type of soil and degree of vegetative cover are a reflection of drainage and slope conditions. The selection of soil type and vegetative cover provides two environment indices to test the popularly-held assumption that "the best land" was settled first. Although the term "best" is a relative expression, an attempt will be made to show the relationship between these two variables and the time of homestead entry onto a selected number of quarter-sections of land (160 acres).

The second set of variables, chosen to evaluate the process of rural settlement, involves distance measurements from the centre of each selected quarter-section to a number of cultural realities that existed in the study area prior to agricultural intrusion. The presence of an urban centre and a network of wagon roads and trails provided an ideal study area for measuring the influence that these features had upon the settlement process. Did the first homesteaders settle on land adjacent to the existing urban centre first? Is there any evidence that settlement penetrated outwards from the urban centre in a progressive concentric wave fashion as illustrated by Bylund? Was land adjacent to the major transportation routes claimed first, and was there a pattern of progressive movement outwards from these major lines? What was the relationship between distance to the nearest trail or wagon road and time of initial homestead



entry? These salient questions will be probed to determine whether these cultural realities affected the process of rural settlement.

The idea that agricultural settlement penetrated northward along a uniform east-west plane will also be investigated. In addition to an analysis of the rural settlement process with reference to the parameters outlined above, the ethnic and demographic background of the early agricultural settlers will be reviewed and interrelated with time of homestead entry and one of the environmental variables--vegetative cover. Although the study focuses upon the relationship between time of initial homestead entry and the environmental and distance variables, additional aspects of rural settlement will be analyzed. The rates of homestead entries, abandonment and cancellation of the same, and the average length of time to patent the selected quarter-section will be reviewed in light of the homesteaders' ethnic background and the quality of the parcel of land filed upon. The rate of land ownership change will be briefly reviewed as well as the change in the form of the rural settlement pattern from the time the area was surveyed to the present time. A succinct description of the change in land use and type of agricultural activity pursued in the study area will round out the entire study.

Prior to the basic analysis, a review of the physiological characteristics of the study will be given,



followed by an analysis of the pre-agricultural era. This review will set the scene for the basic analysis of the agricultural colonization process.

### The Study Area

The Athabasca area of north-central Alberta was selected for two basic reasons:

(1) the area offered a varied physical environment in terms of soil, drainage, topographic and vegetative conditions, and

(2) a bustling fur-trading centre and transshipment depot on the southern banks of the Athabasca River had been in existence some twenty years before the arrival of the first intending homesteader.

The centre of Athabaska Landing was sited at the confluence of the Tawatinaw River and the dominant channel, the Athabasca. In addition to the presence of the Landing, a network of wagon roads and trails led into the centre from all directions. The dominant wagon road was the Edmonton-Athabaska Landing Trail (often referred to as just the Athabaska Landing Trail), which was a well travelled fur-trading route between Edmonton and "the north", its terminus being Athabaska Landing. These cultural features, in addition to the varied environmental characteristics of this region, stimulated interest in the early agriculturalists' responses to these realities.



The size and shape of the study area were governed by two factors:

(1) the positioning of Athabaska Landing within close proximity to the centre of the area was desirable in terms of measuring the influence that this centre had upon the initial settlement process, and

(2) the range of distance measurements from the selected quarter-sections to Athabaska Landing and the major transportation routes had to be of sufficient magnitude to render any temporal-spatial relationships meaningful.

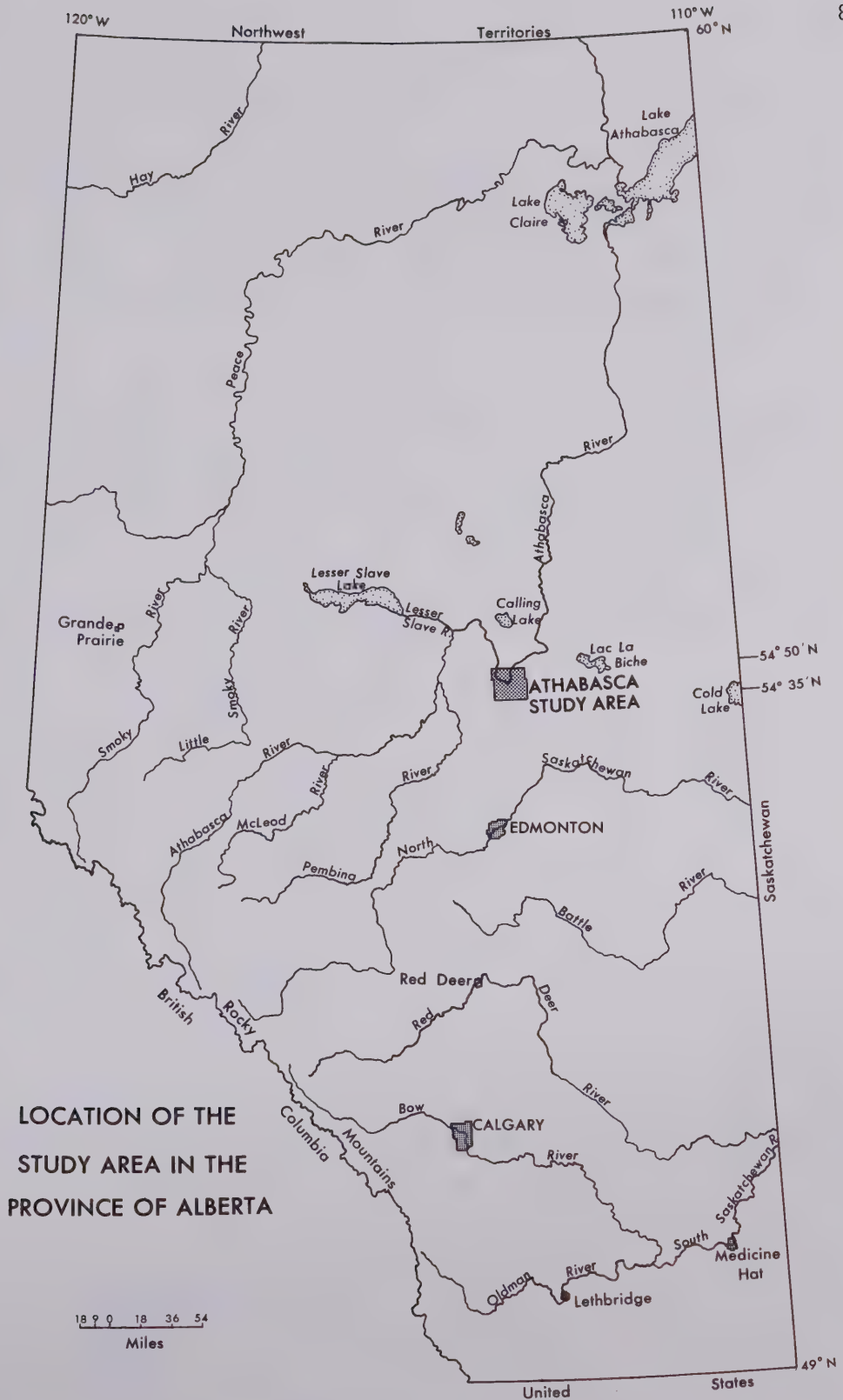
For convenience sake, the township was chosen as the basic areal unit for the study area. Nine townships lying between  $113^{\circ}02'$  W. and  $113^{\circ}30'$  W. longitude and  $54^{\circ}35'$  N. and  $54^{\circ}51'$  N. latitude were selected for this study. (Map 1.1).

### Methodology

The basic unit under investigation in the study of the process of rural settlement in the Athabasca area is the quarter-section (usually 160 acres, but ranging from 158 to 172 in this area). The quarter-section was the basic land unit open for homestead entry to the intending agricultural settler. Since each intending settler was allotted only one-quarter-section, this unit became the logical one to examine analytically.

An investigation of the history of every quarter-section (1,296) opened for homesteading in the study area





LOCATION OF THE  
STUDY AREA IN THE  
PROVINCE OF ALBERTA

Map 1.1



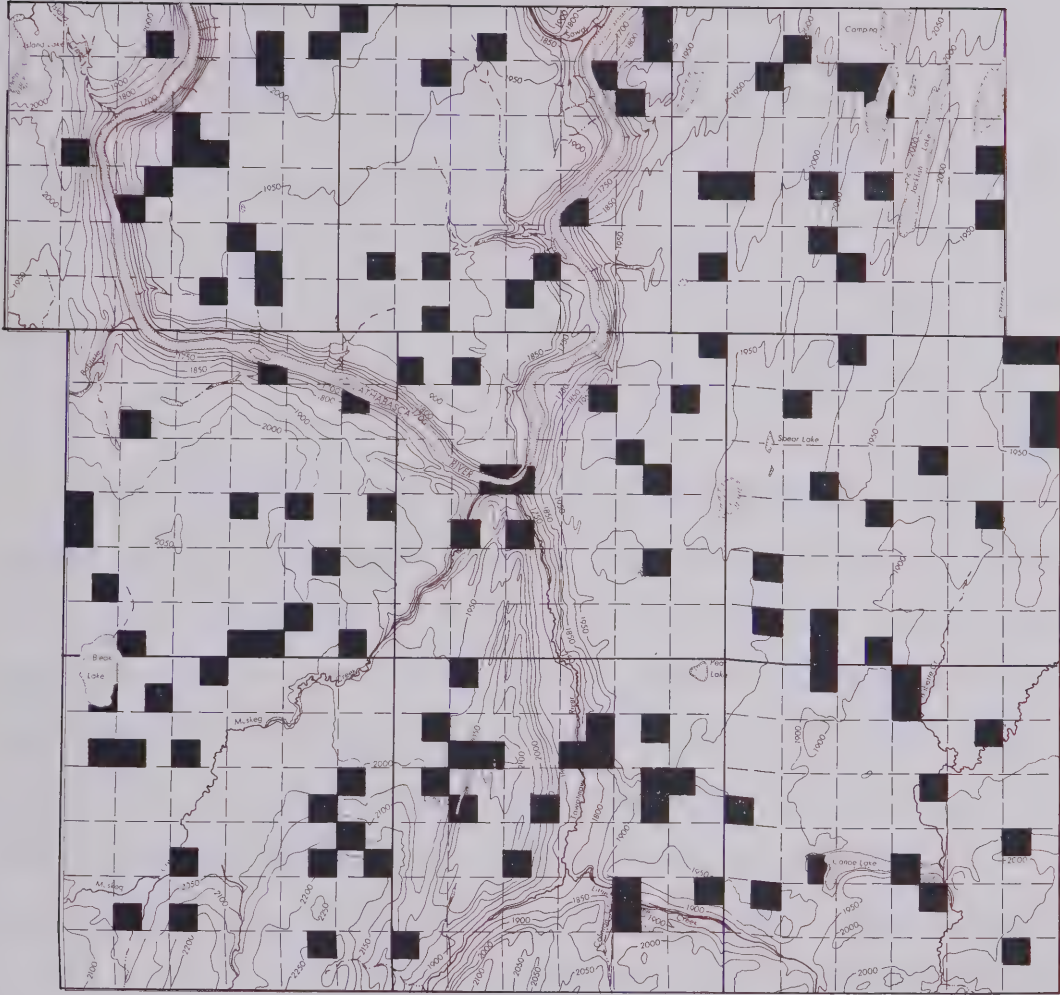
between 1904-1908 was virtually impossible in terms of the objectives outlined above. Although the homestead files were likely available for all quarter-sections in the study area, an examination of all these records would have been an overwhelming task. This was one of the foremost reasons for selecting a random sample of quarter-sections within the study area.

A ten per cent sample was chosen from the potential 1,296 quarter-sections. (Map 1.2). Each of the quarter-sections was numbered and a random numbers table was utilized to select 129 members. To test whether the members of the random sample (129) were representative of the entire quarter-section population, a chi-square test was performed on a parameter that was available for practically every quarter-section within the study area. "Land fit for cultivation" ratings, assigned to every quarter-section plotted by the Dominion Land Surveyors between 1904-1908, was the parameter utilized. These ratings were based on a four point evaluation<sup>1</sup> and were qualitative expressions of the suitability of the land for cultivation.

The percentage frequency of occurrences for each category were calculated for the entire area and for the sample population. (Table 1.1).

- 
- <sup>1</sup>1. Excellent
  2. Good
  3. Fair
  4. Poor





RANDOM SAMPLE OF THE STUDY AREA

Sampled quarter-section



Contours



Stream, intermittent



Lake, intermittent



Map 1.2



TABLE 1.1

PERCENTAGE FREQUENCY OF "LAND FIT FOR CULTIVATION"  
RATING FOR THE SAMPLE AND THE ENTIRE AREA

Land Classification Rating	Percentage Frequency for the Sample	Percentage Fre- quency for the Entire Area
1	0.78%	1.01%
2	10.23	13.75
3	37.79	39.91
4	<u>51.18</u>	<u>48.33</u>
	99.98%	100.00%

To provide some indication of the reliability of the sample as being representative of the entire area, a statistical test was necessary to measure the level of confidence that could be placed in the sample. If the percentage frequencies of the random sample are considered the "observed" frequencies and the entire area frequencies are considered the "expected" frequencies then a chi-square test can be performed to determine whether the sample is "representative" of the entire area. A chi-square test on these data will determine the degree of departure between the sample observations ( $o_i$ ) and the observations ( $e_i$ ). The basic chi-square formula  $x^2 = \sum_i \frac{(o_i - e_i)^2}{e_i}$  has been corrected to  $x^2 = \sum_i \frac{[(o_i - e_i) - .5]^2}{e_i}$  because of

<sup>2</sup>Yates Correction for Continuity (Spiegel, 1961, p. 203).



the limited number of degrees of freedom ( $N-1$ , where  $N$  equals the number of land rating categories). If it is assumed that the distribution of percentage frequencies is "representative" of the percentage frequencies for the entire sample, then the resultant chi-square value is expected to be low, and the corresponding probability level minimal. The probability distribution of chi-square values is determined mathematically and presented in table form, in such a manner as to show the degree that the element of "chance" may have played in the sample frequency distribution.

A chi-square value of 0.854 was calculated from the data presented in Table 1.1. With three degrees of freedom this value was significant at the 0.10 probability level; that is, ten times out of one hundred the variation between the "observed" and the "expected" frequencies has occurred by "chance." Therefore, there is ninety per cent probability of an association between the two sets of data, analyzed on the basis of one parameter--"land fit for cultivation" ratings. Based on the restricted number of land ratings (four) and the limited number of degrees of freedom, the 0.10 probability level, is considered significant and therefore the sample may be termed "representative."

#### Delimitation of the Initial Settlement Period

The following rural settlement analysis focuses upon the period 1904-1915 which has been defined as "the initial



settlement period." Delimitation of 1904 as the earliest year of homestead entry has been based on the earliest homestead entry year that appeared amongst the homestead entry forms that were researched. Some eighty per cent of all the land ever entered upon at least once in the study area between 1904-1970 was claimed under homestead regulations during the initial settlement period. The yearly breakdown of the eighty-five homestead entrants filing onto individual quarter-sections during the initial settlement period are shown below:

TABLE 1.2

ABSOLUTE FREQUENCY AND PERCENTAGE FREQUENCY OF  
INITIAL HOMESTEAD ENTRIES BETWEEN 1904-1915

Year	Claims	Percentage Frequency
1904	1	1.2
1905	0	0.0
1906	0	0.0
1907	4	4.7
1908	6	7.1
1909	7	8.2
1910	11	12.9
1911	25	29.4
1912	19	22.4
1913	11	12.9
1914	1	1.2
1915	0	0.0
	<hr/>	<hr/>
TOTAL	85	100.0

Sources of Information

The pertinent historical data were collected from a variety of governmental maps, records and documents; private



correspondence; newspaper articles; personal interviews and a number of published and unpublished materials. During the summer of 1969, several original homesteaders in the study area were interviewed to enable the researcher to gain a feeling for the area during the initial settlement period. The primary source material came from the homestead files that have been microfilmed and kept on file at the Department of Lands and Forests in Edmonton. These files contain records of every entry by a homesteader on a quarter-section. On record are the date of homestead entry, the entrant's age, the size of his family (often the age of the wife and children were stated whenever applicable), in addition to his birth-place, place of last residence, and an indication of his previous occupation. These data were available for nearly every quarter-section ever homesteaded in the study area during the initial settlement period. These files provide invaluable data on abandonment or cancellation proceedings against a homestead, correspondence between the homesteader and the Homestead Land Office, application for patent forms which record the acreage of land cleared, broken and cropped on each homestead, in addition to the value of farm improvements. The majority of the data analyzed in this study was obtained from the information recorded in the homestead files.

Data for the evaluation of the vegetative cover prior to agricultural settlement were obtained from the Dominion



Land Surveyor's Notebooks (1904-1908). The final vegetative boundaries were drawn by interpolation from air photographs supplemented with C. P. Hotchkiss' Land Classification Notebooks of 1922. The soil type data were gathered from the Alberta Institute of Pedology's Preliminary Soil Survey map of the Tawatinaw Sheet 83-I.

Vertical air photographs were used for the general land use analyses for 1949 and 1969. A general land use survey of the entire area was conducted during the summer of 1969.

Secondary source material was obtained from published and unpublished books and articles. Photographs in the text were obtained from the Ernest Brown Collection, Provincial Archives, Edmonton. The author has also made a minor contribution to the photographic display.



## CHAPTER II

### THE PHYSICAL SETTING

#### Introduction

A review of the physical environment is an essential basis for any rural settlement study if the process of rural colonization is to be at least partially understood and appreciated. The physiography of the Athabasca study area in terms of the bedrock geology, surficial geology, relief and drainage conditions will be analyzed briefly. Soils and vegetative cover prior to agricultural penetration will be reviewed in greater detail due to the attention these two variables receive in later analysis.

#### Physiography

##### Relief

The advance and retreat of the last continental glacier deposited a thick cover of drift over the Upper Cretaceous sandstones and shales of the study area (Map 2.1). The presence of extensive fields of glacial flutes<sup>3</sup>, to the south and northeast of the townsite of Athabasca, provide

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<sup>3</sup>Generally, long straight ridges of variable height and amplitude.





BEDROCK GEOLOGY

Upper Cretaceous;  
sandstone, shale, coal,  
minor bentonite



Upper Cretaceous;  
shale, minor sandstone



Lake



Lake, intermittent



Source: *Atlas of Alberta*, p. 7.

Map 2.1



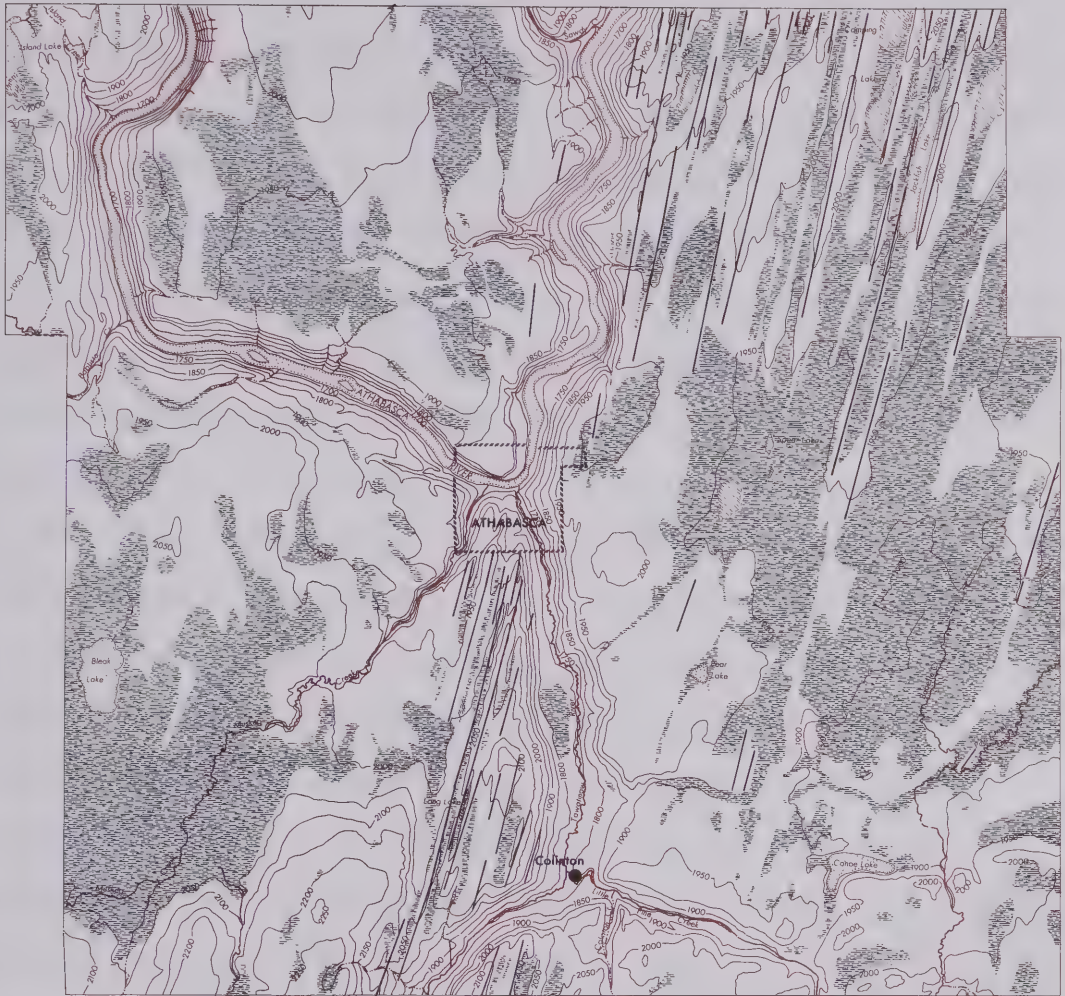
evidence that the Wisconsin age ice mass, which originated in the Keewatin area of northeastern Canada, advanced over the region from a north northeasterly direction. (Map 2.2). The orientation of these ridges ranges from N10°E to N20°E, with a median of N15°E.<sup>4</sup>

The formation of flute fields has stimulated considerable speculation for some time. The composition of the linear ridges within the Athabasca area of Alberta varies locally. The field to the south of the Town of Athabasca and several of the ridges immediately to the east of the Athabasca River in the north-east quadrant of the study area are composed of till. Those lying in the northeastern section are basically composed of till. However, the till has been mantled with water-deposited sands and gravels, likely the product of a pro-glacial lake beach. (Preliminary Soil Survey of the Tawatinaw Sheet 83.I, 1970, Personal Communication with Dr. John Shaw, Department of Geography, University of Alberta, Edmonton, 1970). It has been suggested that flute fields originated from "alternating high and low pressure zones" at the base of an extremely thick continental ice mass and are therefore created by erosive action. (Gravenor and Meneley, 1958, p. 727). The idea that flutes are "triggered" by some irregular feature in the topography prior to mass ice movement is denounced by Gravenor and Meneley, (1958, p. 718).

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<sup>4</sup>All measurements were determined from "true north."





DISTRIBUTION OF FLUTE FIELDS AND SWAMP AREAS



Source: Dominion Land Surveyor's  
Notebooks, 1904-08 and  
Air Photo Interpretation.

Map 2.2



They claim that such a relationship is at the best obscure (Gravenor and Meneley, 1958, p. 718). The flutes in the Athabasca area are situated on the upland areas and, in most cases, they stand out as singular parallel features. In some cases, smaller flutes have been super-imposed on the flanks or near the apex of the broadly based ridges (the width ranges from less than 30 yards to over 800 yards). The amplitude of the ridges ranges from approximately thirty-five feet in the northeastern area to less than five feet in the area immediately to the east of Colinton on the upland lacustrine plain. (Only those in excess of 25 feet in height have been shown on Map 2.2.) In the latter area, the flutes appear to have been modified by glacial meltwater and subsequent lacustrine deposition following the retreat of the continental ice sheet. An examination of vertical air photographs of the Athabasca area substantiates Gravenor and Meneley's contention that "fluting development is independent of topographic control," (1958, p. 718).

The flutes and the occasional drumlinoid feature on the upland plain (considered to be the area above the 1,900 foot contour line on the topographic map) form rolling topography. None of the slopes exceeds fifteen per cent in the flute fields, and the majority of them range between five per cent and nine per cent.<sup>5</sup> (Preliminary Soil Survey of

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<sup>5</sup>A five per cent slope, for example, means a rise of five feet for every one hundred feet along the horizontal plane.

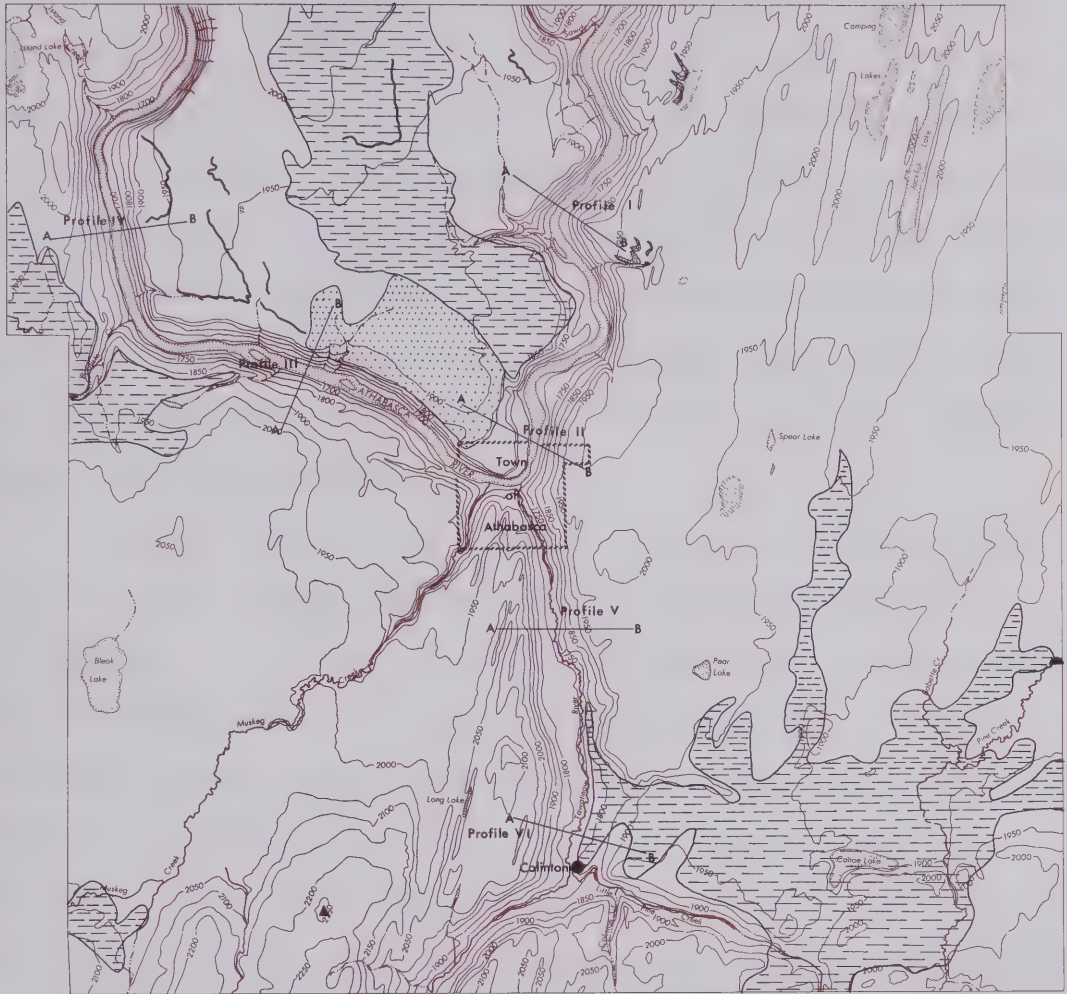


the Tawatinaw Sheet 83.I, 1970). The highest point is situated on a drumlinoid feature to the west of the Tawatinaw River Valley and some three miles west of Colinton (Map 2.2). The lowest point on the upland surface lies on Pine Creek on the eastern boundary of the study area. Here the elevation is approximately 1,875 feet. (Athabasca East Topographic Sheet 83I/11E). The lacustrine plain to the east of Colinton is relatively featureless and for the most part, the till plain offers an undulating (0-3 per cent slope) to gently rolling (3-8 per cent slope) topography. (Preliminary Soil Survey of the Tawatinaw Sheet 83.I, 1970).










The two minor sand dune areas and the low esker ridges north of the Athabasca River (Map 2.3) add further relief to an otherwise flat (0 per cent slope) to undulating terrain (1-3 per cent). A small area of hummocky moraine in the extreme northwest corner of the study area, lying between the edge of the Athabasca River Valley and the western boundary, has gently rolling (3-8 per cent) to strongly rolling (over 15 per cent) topography.

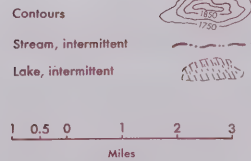
The incision of the Athabasca River into the glacial overburden and Upper Cretaceous bedrock, to a depth of over 275 feet at the northern extremity of the area, creates a local relief for the entire area of over 550 feet. The most severe slopes are found along the banks of the Athabasca River Valley. As the continental glacier retreated, the former Athabasca River channel became obstructed by the ice mass and the river was forced to carve a new channel to the





**DISTRIBUTION OF MAJOR SURFICIAL DEPOSITS, ESKERS AND SAND DUNES**

- Lacustrine deposits 
- Alluvial and aeolian deposits 
- Till deposits 
- Esker 
- Sand dune 
- Point of highest elevation on upland plain 
- Point of lowest elevation on upland plain 
- Positions of cross-sectional profiles of the river valleys 
- Town boundary 



Source: Preliminary Soil Survey of the Tawatinaw Sheet (83-1), Alberta Institute of Pedology, 1970 and Air Photo Interpretation.



south of the retreating ice sheet. The pre-glacial channel ran through Calling Lake and southeastward through Lac La Biche, (Hardy, 1967, p. 12). For the most part, the present Athabasca River Valley is V-shaped. However, there is one area along the rivercourse where terrace development has been significant (Fig. 2.1, Profile II).<sup>6</sup> The cross-section illustrates the positioning of two distinct terraces, the lower one being approximately thirty feet above the stream-bed and the higher one being about ninety-five feet higher than the lower terrace.

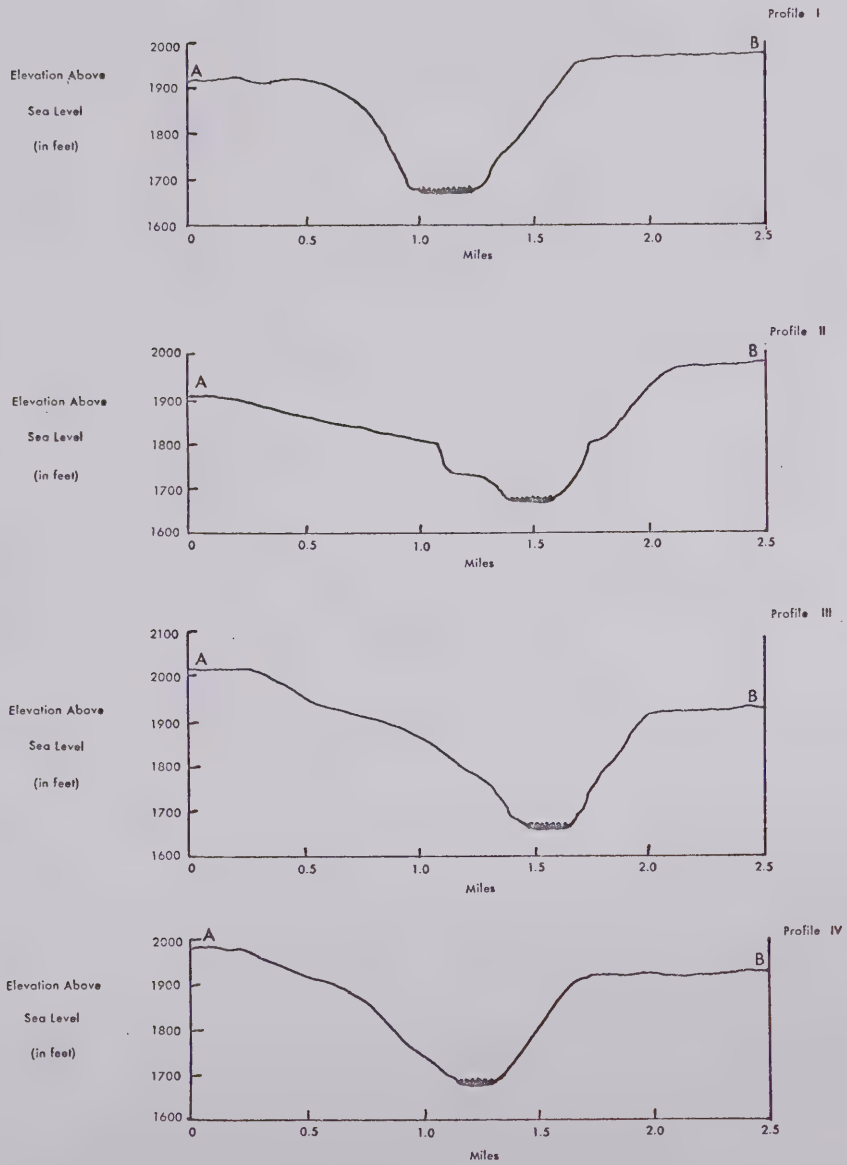
The Tawatinaw River valley creates a distinct break in the upland surface in the south-central portion of the study area. The valley broadens upstream from the townsite of Athabasca, where terraces have been cleared and cultivated. Several meander scars appear on the vertical air photographs of the area adjacent to the cross-section shown at Profile VI (Fig. 2.2). The presence of flutes on the western side of the valley accounts for the discrepancy in height between the upland surface to the west and that to the east. The depth of the Tawatinaw River valley (measured from the 1,900 foot contour line) is 150 feet in the Colinton vicinity. Generally, the flanks of the Tawatinaw River valley are not

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<sup>6</sup>The positioning of the cross-sectional profiles illustrated in Figures 2.1 and 2.2 are indicated on Map 2.3.



# SELECTED CROSS-SECTIONAL PROFILES OF THE ATHABASCA RIVER VALLEY



Horizontal Scale: 1:50,000

Vertical Scale: 1:4,800

Vertical Exaggeration Factor 10.4

Fig. 2.1



## SELECTED CROSS-SECTIONAL PROFILES OF THE TAWATINAW RIVER VALLEY

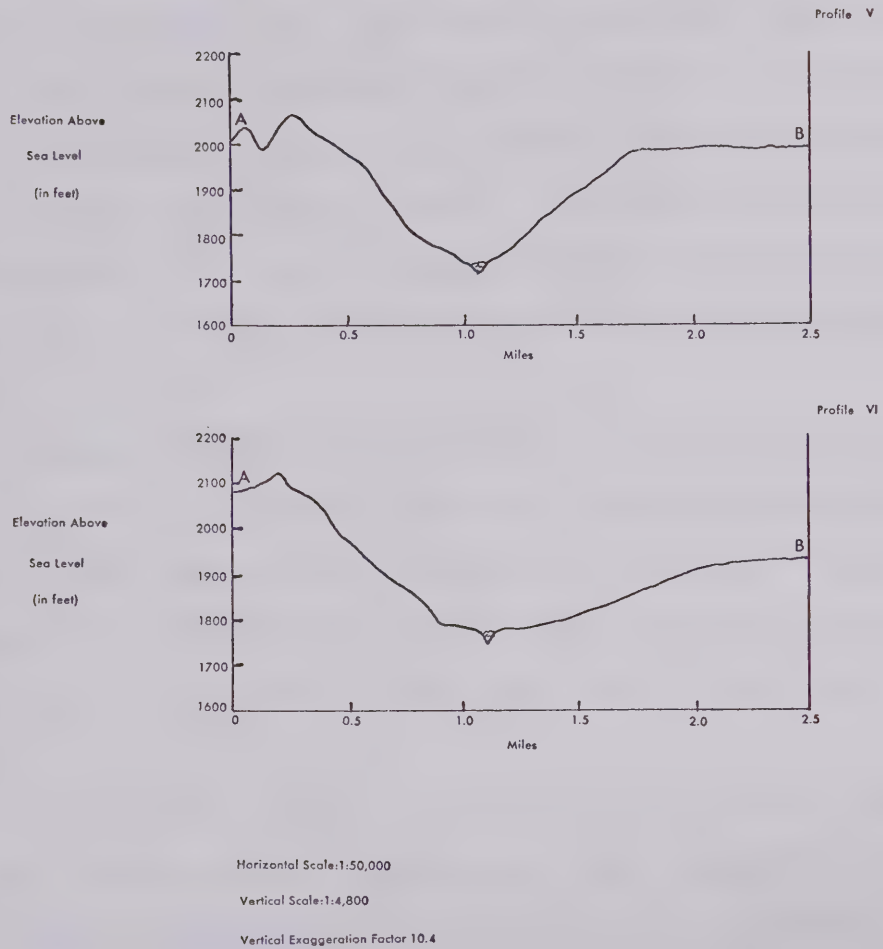


Fig. 2.2



as steep as those of the Athabasca River channel. A broadly meandering Tawatinaw River has carved a wide, shallow channel, through glacial overburden and into the underlying shale and sandstone bedrock. Likewise, the Athabasca River incised rapidly and deeply into the glacial overburden, but its course was largely determined by the presence of massive sandstone formations. The purely sandstone formation appears to have resisted any fluvial incision in favor of the adjacent shales (Map 2.1). This structural control accounts for the effective limitation of terrace development within the valley.

Muskeg Creek, a short tributary of the Athabasca River has incised a deep channel into the till and lacustrine plain areas to the southwest of the Town of Athabasca. This creek dissects the upland surface very effectively, providing steep slopes and a variation in relief of over 150 feet near Athabasca.

Little Pine Creek, a tributary of the Tawatinaw River has cut a wide shallow valley across the lacustrine plain and flutes, immediately to the southeast of Colinton.

### Drainage

Drainage conditions range from very poor to excellent in the study area. The alluvial sands and gravels, the eskers and flutes, the drumlinoid features and the sand dunes drain rapidly and therefore tend to be dry throughout the year. Within a localized or small area, there is a tremendous



contrast in drainage conditions. For example, the inter-flute troughs in the northeastern portion of the study area tend to be very poorly drained and support a prolific growth of sphagnum; this condition lies in direct contrast to the flutes which tend to be very dry and support a scrubby poplar (Populus tremuloides) cover, mixed with jack-pine (Pinus banksiana).

The extensive muskeg areas are naturally very poorly drained. These areas occupy a considerable proportion of the study area (Map 2.2). Attempts have been made at various times to drain some of the smaller muskeg areas which lie adjacent to or within close proximity to a drainage channel.

The flanks of the Athabasca and Tawatinaw River valleys are naturally well drained. The Pine and Muskeg Creeks provide a drainage outlet for the flat to undulating till and lacustrine upland areas. (Map 2.3). Muskeg Creek originates in the large muskeg area on the western boundary of the study area. Pine Creek, and its tributary, the Babette, are the only streams whose waters do not reach the Athabasca River within the study area. Pine Creek flows into the La Biche River, which empties into the Athabasca River some fifty miles downstream from the townsite of Athabasca.

The finger-shaped lakes in the northeastern region occupy shallow troughs between the flutes. Bleak Lake, Spear Lake and Pear Lake are also shallow, but are surrounded by an extensive area of muskeg.



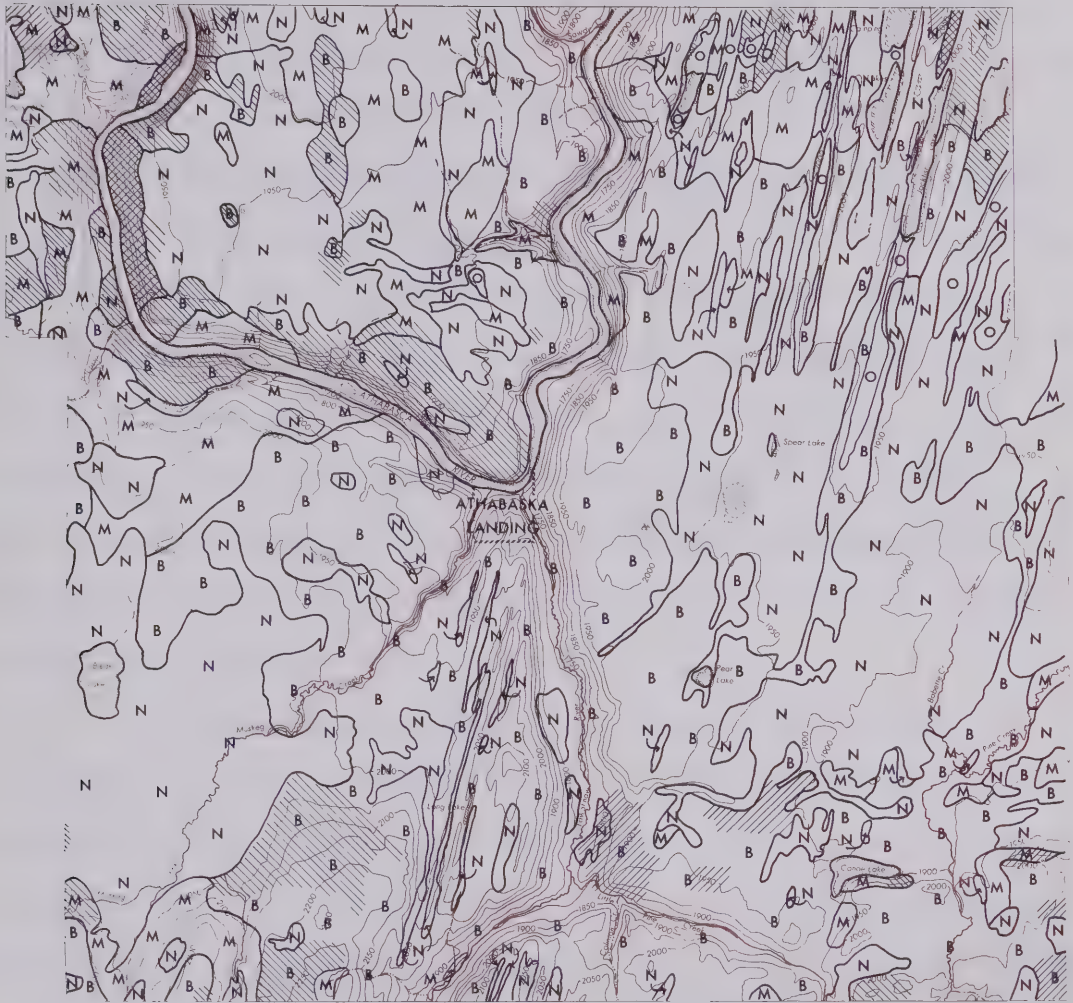
The till plain and lacustrine plain areas are moderately well drained to well drained. Moisture infiltration and moisture retention are generally good in these areas, because of the nature of the slope conditions, and the soil texture and structure. The silty loams and silty clays of the flat to undulating topography permit snow melt and rainfall infiltration rather than run-off.

### Vegetation

The natural vegetative cover of the Athabasca area has been described as "boreal mixedwood forest" (Hardy, 1967, p. 153). Although this classification is based on recent investigations, the presence of coniferous and deciduous tree types is as true today as it was prior to agricultural settlement. A comparison of the distribution of the vegetative types at the time of initial land survey (1904-1908) with present remnants of vegetative types, reveals a relatively insignificant variation. The only significant change in the vegetative cover generally, is that the trees are larger and the density greater, now than previously.

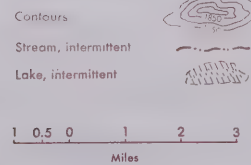
A micro-analysis of the vegetative cover prior to agricultural intrusion reveals that there was a distinctive distribution of needleleaves, broadleaves and combination of both (Map 2.4). The only portions of the study area that were virtually deplete of tree growth were the open-muskeg





NATURAL VEGETATION COVER, 1904-08

Needleleaf	N
Broadleaf	B
Mixed Needleleaf-Broadleaf	M
Open (Swamp)	O
Brulé	///
Windfall	///
Boundary of the Hudson's Bay Company Reserve	----



Source: Dominion Land Surveyor's  
Notebooks, 1904-08

Map 2.4



areas and small meadows along the meandering stream courses of Pine Creek, Little Pine Creek and the Tawatinaw River. These meadows are composed largely of pea vine (Lathyrus ochroleucus) which grew prolifically and was utilized by the early settlers as fodder for their livestock.

Scrub poplar (Populus tremuloides and Populus balsamifera) and willow (Salix spp.) had mantled the lacustrine and till plains at the beginning of the twentieth century. This scrub cover had invaded a former grassland area that had previously been subjected to repeated burning. East of Colinton on the till and parts of the lacustrine plain, the degraded black soil profiles suggest that this area was once grassland. (Preliminary Soil Survey of the Tawatinaw Sheet 83.I, 1970).

The presence of brulé (burned-over forest cover) was a common sight in the study area at the turn of the century. When fire had succeeded in thoroughly levelling a mixedwood forest cover, the rejuvenation of both conifers and deciduous species would occur. However, the ability of such deciduous species as the poplar (Populus tremuloides) to "sucker" quickly, soon robbed the struggling conifer seedlings of both moisture and sunlight. Therefore when the burnt over areas (brulé) were two or three years old, a scrub growth of poplar and willow had regenerated between the fallen or charred trunks of larger trees.

When fire swept the muskeg areas which had a cover of



black spruce (Picea mariana) and tamarac (Larix laricina), white birch (Betula papyrifera) succeeded as the dominant species.

Windfall areas were particularly common along the steep west-facing slopes of the Athabasca River valley, where the poorly rooted conifers were exposed to the strong westerly and north-westerly winds, which effectively toppled the trees, hence the name "windfall." The steep gradient of the valley sides did not encourage a strong root system. Unstable root systems also developed on peaty material within the swamp areas and produced conditions favourable for the natural felling of spruce and tamarac whenever strong winds occurred. The west-facing flanks of the flutes were open themselves to the direct exposure of the prevailing north-westerly winds and windfall was prevalent in these areas, often in association with brulé.

Populus tremuloides and Populus balsamifera preferred the moderate to well drained lacustrine and till plains. The Salix spp. flourished in patches along the banks of the creeks, rivers or adjacent to the muskeg or swampy areas. The tamarac (Larix laricina), a deciduous needleleaf, was found in association with both black spruce (Picea mariana) and white spruce (Picea glauca). These needleleaves flourished around the fringes of the open swamps or muskegs that were poorly drained. The distribution of jack-pine (Pinus banksiana) was primarily confined to the well-drained



flutes, eskers and sand dunes in the study area. Such descriptions as "Jackpine ridge" from the Dominion Land Surveyor's Notebooks provide evidence of this close association (J. L. Coté, D.L.S., Notebook for Twp. 67, R. 21, W.4).

### Soils

According to the Alberta Institute of Pedology, five major soil orders are found within the study area: chernozems, luvisols, brunisols, gleysols, and organic soils (Map 2.5). Although the mapping of soils has been generalized, the following discussion will focus upon a relatively detailed description of selected soil types that were areally dominant within the soil boundaries drawn by the Alberta Institute of Pedology.

The chernozemic soil order in the Athabasca area is best represented by the orthic dark gray chernozems, a subgroup of the dark gray chernozemic group.<sup>7</sup> The dark gray chernozems are commonly referred to as "degraded black" soils, an expression arising from the fact that organic colloids and mineral constituents are eluviated (or leached) from a portion of the A horizon (Ae) of the soil profile to the underlying B horizon (Fig. 2.3). Downward infiltration of humic acids, produced when precipitation infiltrates through the upper horizons, is responsible for the removal of some of

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<sup>7</sup>Order - Chernozems  
Group - Dark gray chernozems  
Sub-Group - Orthic dark gray chernozems





DISTRIBUTION OF GREAT SOIL ORDERS

Chernozems  
Luvisols  
Gleysols  
Brunisols  
Organic Soils  
Rough and Broken



Lake  
Lake, intermittent



1 .5 0 1 2 3  
Miles

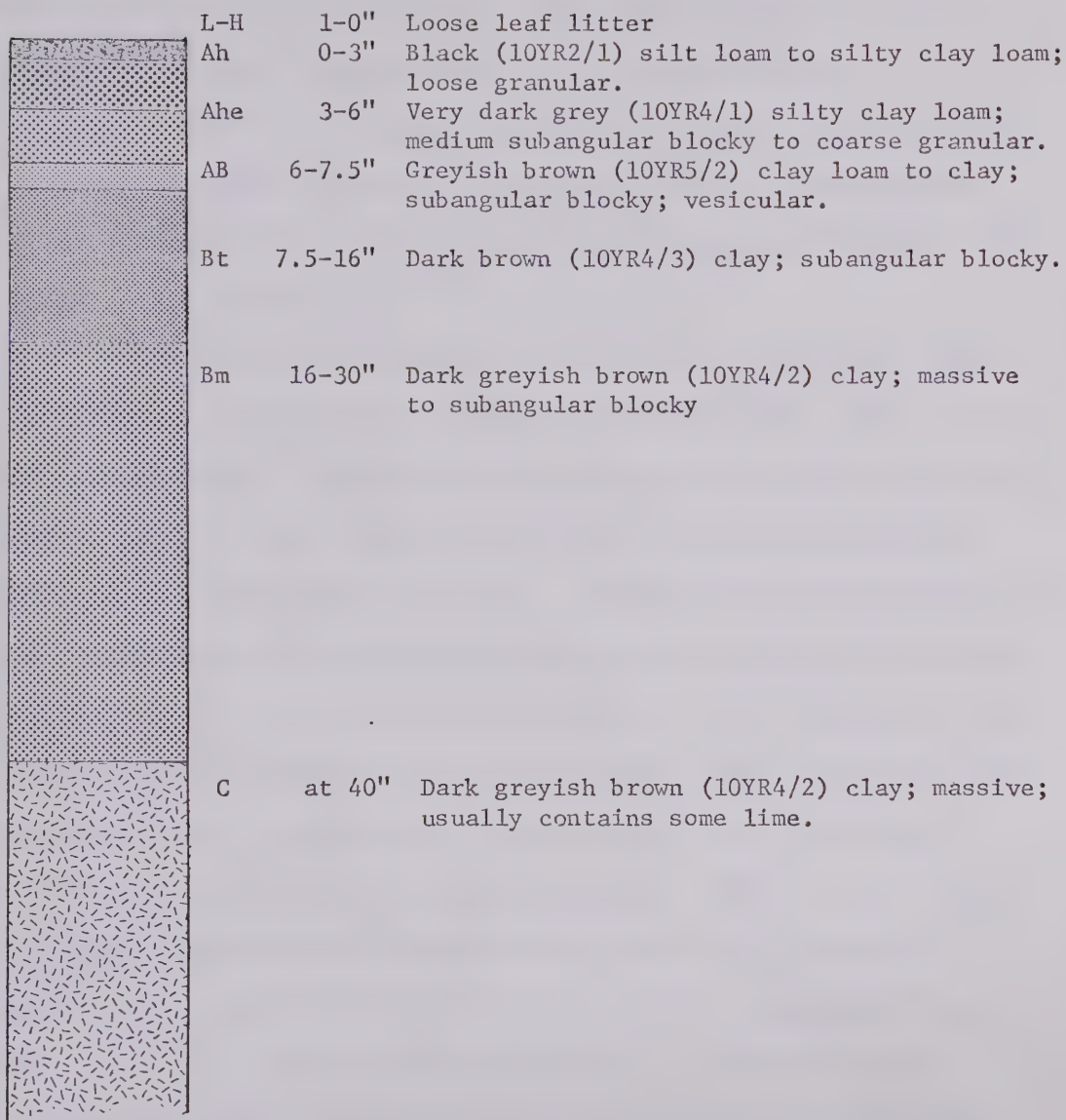
Source: Preliminary Soil Survey of the Tawatinaw Sheet (83-1)  
Alberta Institute of Pedology, 1970.

Map 2.5



## PROFILE OF AN ORTHIC DARK GREY CHERNOZEM (Mico Series)

Horizon Depth



Scale - 1:10

Source: Bowser, W. E., Kjearsgaard, A. A., Peters, T. W., and Wells, R. E., Soil Survey of Edmonton Sheet (83-H) Canada Department of Agriculture, 1962, p. 31.

Fig. 2.3



the clays, bases, sesquioxides and colloidal organic matter that exist in the A horizons. These accumulate in the B horizon or zone of illuviation (i.e. accumulation). The Ae horizon is left an ash-gray color and is generally deficient in humic colloids and minerals, and is left in an acidic, siliceous condition. If an Ae horizon appears, the soil is termed a "podzol."

Fig. 2.3 is an example of an orthic dark gray chernozem that has developed on lacustrine material. The eluviated horizon (Ahe) is a mere three inches below the loose leaf litter, (Fig. 2.3). The transitional AB horizon overlies the enriched silicate clay (Bt). At the zone of illuviation, the Bt horizon contains colloidal humus in addition to some sesquioxides, (likely iron and aluminum) that has been carried downwards from the upper horizons. The Bm horizon is likewise clayey in texture, but contains only the non-soluble mineral matter. (Bowser et al. 1962, p. 64). Till is usually encountered immediately below the B horizon, usually at a depth of forty to fifty inches (Bowser et al. 1962, p. 31). A detailed description of the structure, texture and color of the various horizons in the soil profile are shown in Fig. 2.3.

The orthic dark gray chernozems have developed under a transitional grassland to woodland vegetative cover. In the study area they are located on the well drained gently undulating (2-5 per cent slope) lacustrine plain east of Colinton. This particular sub-group is represented by the major



chernozemic soil group on Map 2.5.

There are two primary luvisolic sub-groups within the study area, the orthic gray luvisols and the dark grey luvisols. The former type is the most widespread soil grouping within the entire study area. The luvisolic order on Map 2.5 is represented by the orthic gray luvisolic sub-group, which is the dominant gray luvisol present in the area.

The orthic gray luvisols tend to be low in humus and mineral content. This is exemplified in the five inch depth of the Ae horizon (Fig. 2.4). The  $Bt_1$  and  $Bt_2$  horizons are rich in silicate clays, are blocky in structure and tend to impede drainage. There are also potential zones of iron and aluminum oxide accumulation. The Ck horizon is rich in carbonates.

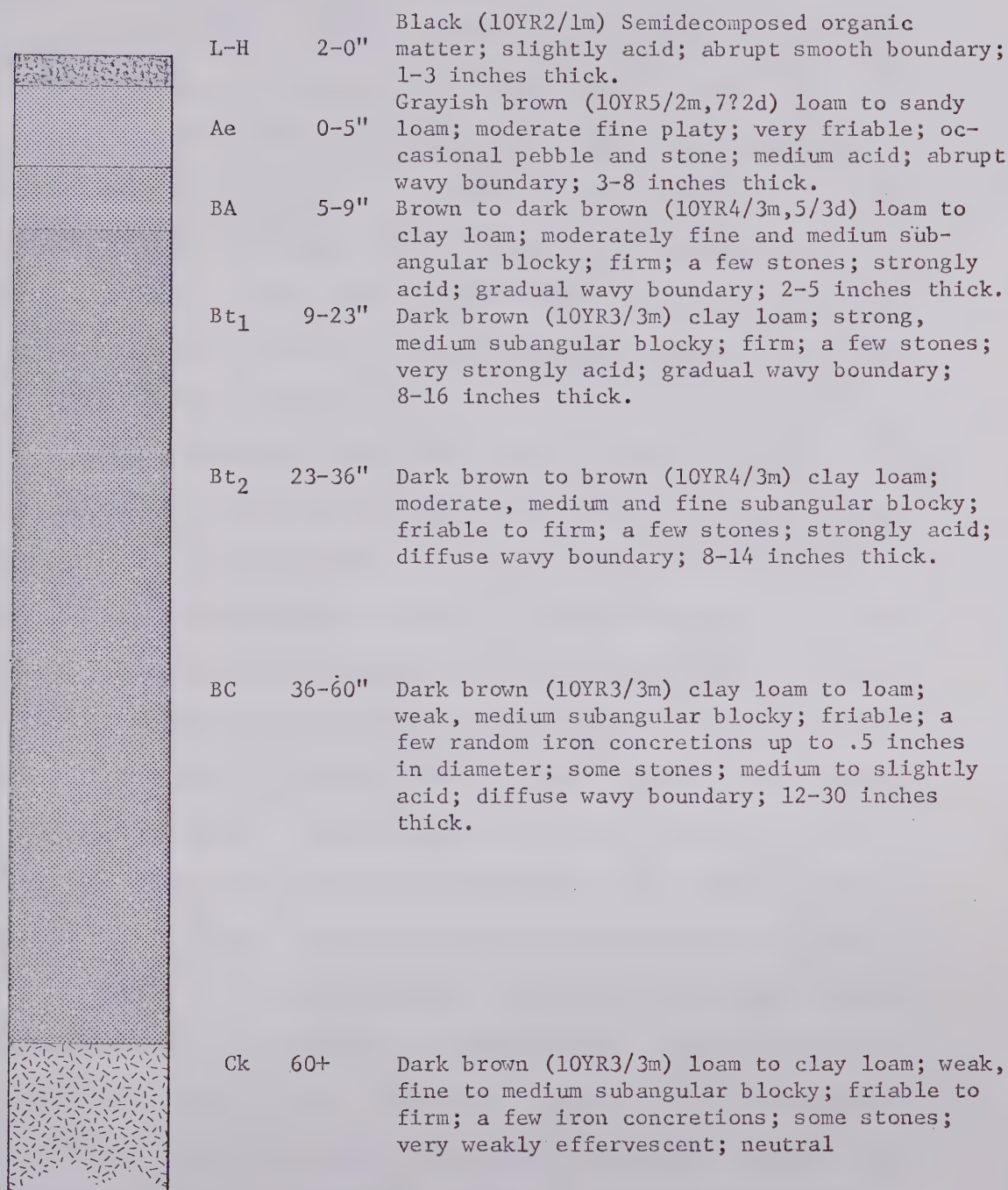
The orthic gray luvisols have developed under a mixed deciduous and coniferous tree cover, under relatively cool, moist climatic conditions. These soils are found primarily in association with till. However, north of the Athabasca River their distribution is associated with lacustrine and alluvial lacustrine deposits. The soil profile shown in Fig. 2.4, typifies those soils south of the Athabasca River.

The brunisols are closely associated with the alluvial and aeolian material that is imposed on the till ridges (flutes) in the northeast sector of the study area. These soils also appear on the alluvial-aeolian material north of Athabasca (Map 2.4). They have developed under a mixed



## PROFILE OF AN ORTHIC DARK GRAY LUVISOL (Athabasca Series)

Horizon Depth



Scale - 1:10

Source: Pers. comm. with Mr. A. A. Kjearsgaard, Alberta Institute of Pedology

Fig. 2.4



deciduous and coniferous tree cover.

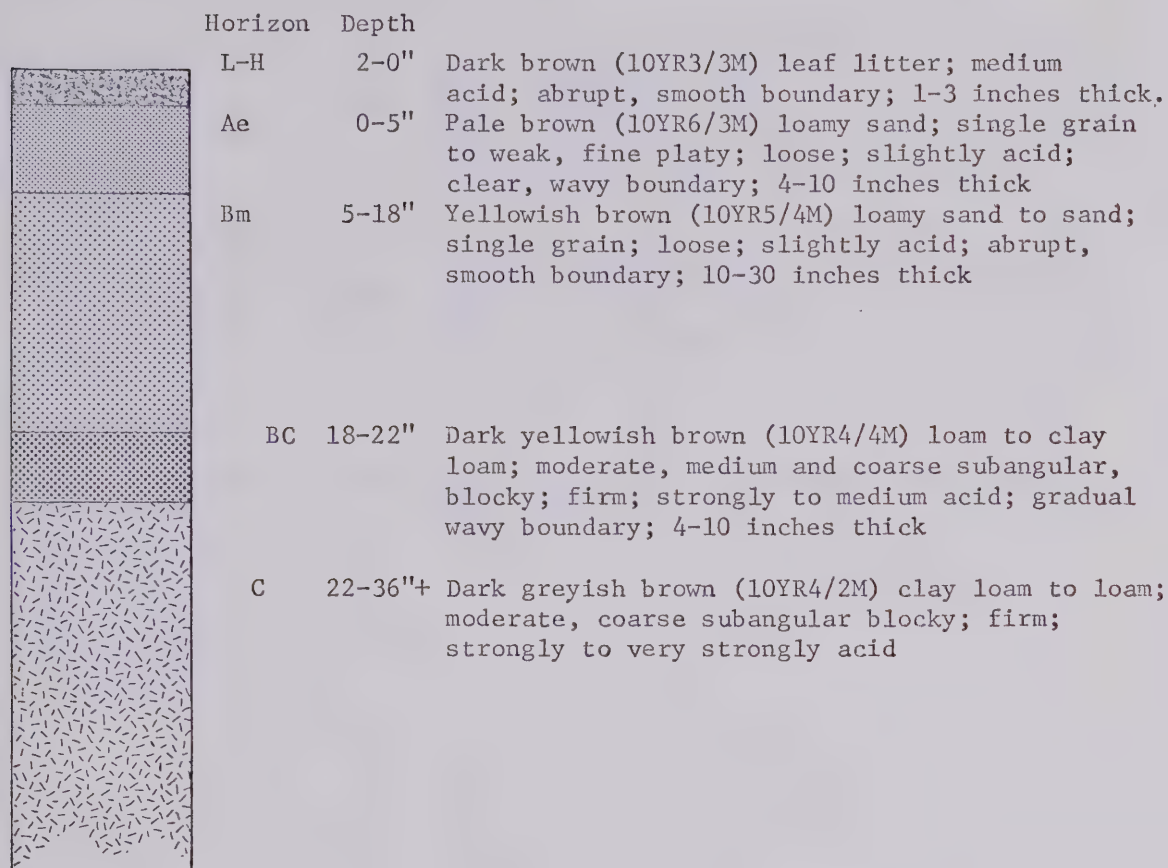
The cross-sectional profile of an eutric (meaning rapidly drained) brunisol is illustrated in Fig. 2.5. A horizon enriched with organic matter (Ah) is completely absent and there is a five inch eluviated horizon Ae. The loamy sand facilitates rapid leaching of any potential humic colloids, bases and sesquioxides from the Ae horizon into the Bm horizon where only the non-soluble mineral particles have accumulated.

Two gleysolic soils have been chosen to illustrate the variation in soil composition within the soil order. The orthic humic gleysol (Fig. 2.6) has an eight inch Ah horizon but lacks the eluviated horizon. The underlying B horizon is permanently moist and dark gray in color which is indicative of reduced compounds. This gleysol is located in the area to the east of Canoe Lake, in the southeastern sector of the study area. Imperfectly to poorly drained, this soil has developed over fine-textured stone-free lacustrine material and under a willow and/or sedge vegetative cover.

The other gleysol shows a definite eluviated horizon (Fig. 2.7) of four inches in depth (Aegj). The underlying B horizon (Btgk) is the illuviated zone, as it contains carbonates and silicate clay. The humic eluviated gleysol has developed under a willow and poplar cover where drainage conditions are poor and the topography is gently undulating (2-5 per cent slope) to depressional (less than 0.1 per cent



## PROFILE OF AN EUTRIC BRUNISOL (Codessa Series)



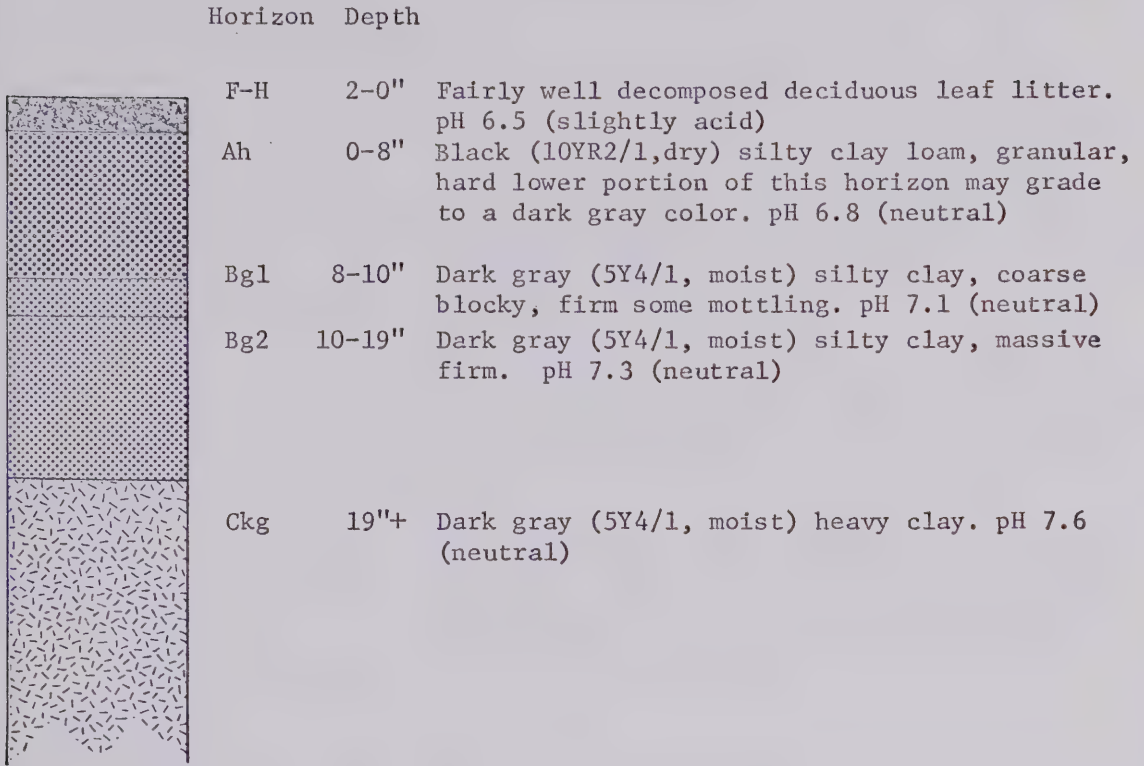
Scale - 1:10

Source: Pers. comm. with Mr. A. A. Kjearsgaard, Alberta Institute of Pedology

Fig. 2.5



PROFILE OF AN ORTHIC HUMIC GLEYSOL. (Raven Series)



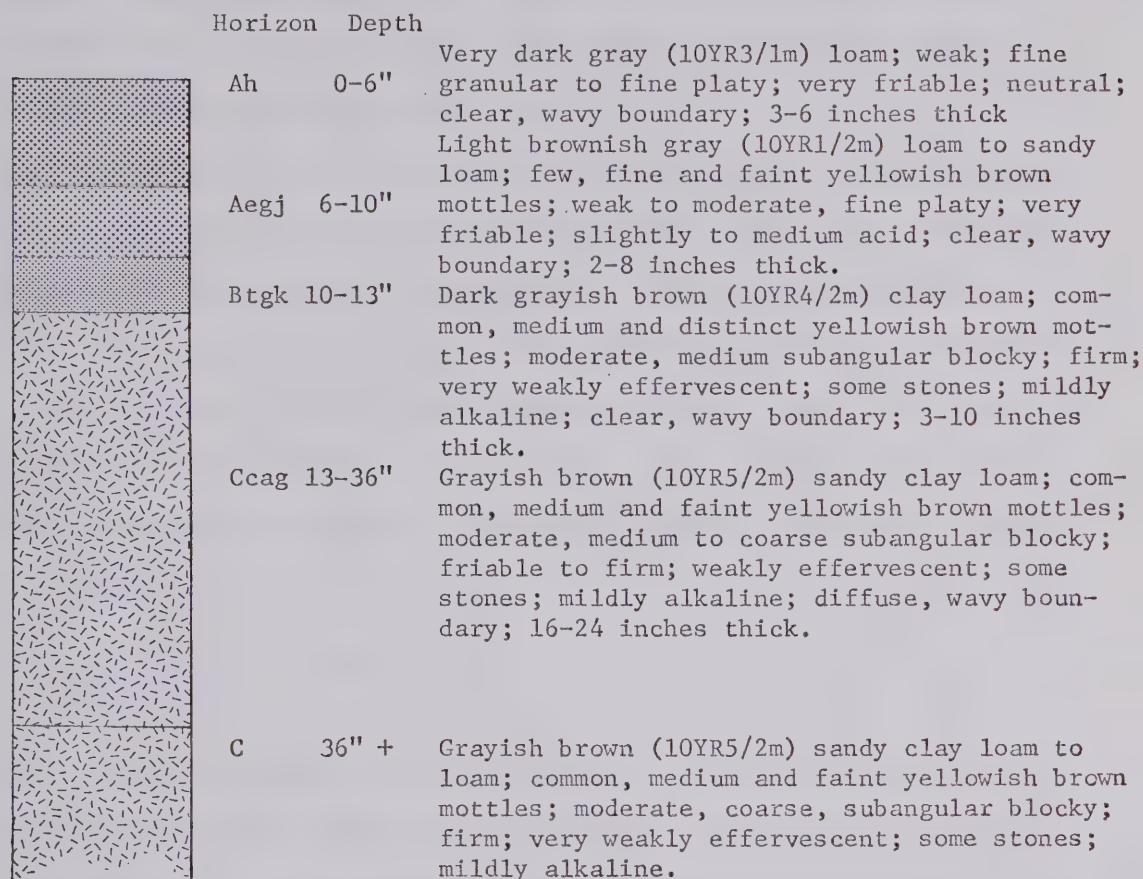
Scale - 1:10

Source: Lindsay, J. D., and Odynsky, W., Soil Survey of the Buck Lake and Wabamum Lake Areas, Soils Division, Research Council of Alberta, 1968.

Fig. 2.6



## PROFILE OF AN HUMIC ELUVIATED GLEYSOL (Mapova Series)



Scale - 1:10

Source: Pers. comm. with Mr. A. A. Kjearsgaard. Alberta Institute of Pedology

Fig. 2.7



slope). This gleysolic soil overlies till material and is found on the fringe of the large muskeg area in the southwestern sector of the study area.

The organic soils are composed of sedge and moss peats and do not have any soil profiles, other than some possible gleying in the mineral sub-stratum. These soils may be underlain by clay material which inhibits infiltration thereby encouraging the growth of sphagnum moss and a scattered growth of black spruce and tamarac. The organic soils are the second most common soil order within the entire study area (Map 2.5).

### Conclusions

The Athabasca study area has a varied physiography in terms of relief, drainage conditions, vegetative cover and soil types. The Athabasca River, with its headwaters in the Rocky Mountains (Athabasca Glacier) and its terminus at Lake Athabasca, has incised a channel of two hundred and seventy-five feet in depth, the most abrupt variation in relief throughout the study area. The great bend of the river southward towards Edmonton was instrumental in attracting a fur-trading company to establish a post and navigation depot on the southernmost tip of the 'great loop' as early as 1883.

Drainage conditions ranged from excellent on the flutes, eskers and sand dunes, to very poor in the massive muskeg or swampy areas. The lacustrine plains and portions of the



till plains were moderately well drained and were the primary areas for agricultural settlement. The Tawatinaw River and the numerous creeks throughout the study area, were the traditional home of the beaver, a fur-bearing animal which was sought by the Indians for the fur trade.

The state of the vegetative cover at the time of the initial survey of the study area by the Dominion Land Surveyors showed signs of possible human intervention. Brulé areas were common, and their presence was often attributed to the negligence of the Indian as well as the fur-trader. Regeneration of deciduous and coniferous tree types was rapid in the burned-over areas. The variation in the type and density of the vegetative cover had a significant influence on initial agricultural penetration into this uninhabited region.

Likewise, distribution of the varied soil groups (chernozems, luvisols, brunisols, gleysols and organic) throughout the study area effected the process of agricultural colonization. The degree of influence that vegetative cover and soil types had upon the initial agricultural settlement process will be examined in Chapter V.



## CHAPTER III

### PRE-AGRICULTURAL SETTING

#### Approaches by the Fur-Traders

Prior to the penetration of the white fur traders, the Athabasca region was traversed by Woods Indians of Athapascan linguistic stock (Stanley, 1936, p. 4). Although the alignment of the Woods tribes was difficult to determine, it has been suggested that the Slaves (Chipewyans) frequented the Lesser Slave Lake and Athabasca River areas of north-central Alberta (Morton, 1937, p. 11). During the eighteenth century, the Slaves were displaced from the Athabasca area by southern Crees, who had over-powered the vulnerable Slaves with firearms, received from the white fur traders in exchange for peltries. Firearms had been given to the Crees in an attempt to bolster the fur supply. Driven from their former fur-rich territory, the Slaves pushed northward to the large inland lake which now bears their name--Lesser Slave Lake.

The Wood Crees dominated the Athabasca area of north-central Alberta throughout the eighteenth and nineteenth centuries (Morton, 1937, p. 12). Unlike the Plains tribes of Southern Alberta who banded together into cohesive groups,



the Wood Crees migrated in small familial groups in search of moose (Alces alces andersoni) and caribou (Caribou rangifer), (Morton, 1937, p. 9). Moose was to the Woods Cree what the buffalo was to the Plains Indian. Although the moose provided the Woods Cree with a staple food supply, the hides of the animal were used for tent construction and clothing, the horns and bones for tools, the back sinew for thread and the coarse bristly manes (six inches in length) for embroidery, (Seton, 1909, p. 181). Fish, caught from the innumerable lakes, rivers and streams supplemented their diet. During the summer months wild berries (saskatoons, raspberries, strawberries, etc.) provided a variation in the Indians' diet. Besides providing personal sustenance, the Wood Crees were engaged in hunting or trapping the ubiquitous beaver (Castor canadensis canadensis), an amphibious creature, whose fine inner hairs were highly prized by London and Paris hatters. The procuring of furs, particularly the beaver, had motivated English entry into the Hudson's Bay in the late 1660's. In 1670, King Charles II of England not only granted the newly formed Company of Adventurers (later the Hudson's Bay Company) the monopoly of trade through the Hudson Strait, but monopolistic trading rights and the exclusive possession of the entire Hudson Bay watershed (Morton, 1937, p. 55). This newly proclaimed British colony was named Rupert's Land.

The Athabasca study area is located beyond the territory chartered to the Hudson's Bay Company in 1670. The entire Athabasca River system, with its headwaters in the



Rocky Mountains and its terminus at Lake Athabasca, was located within the Arctic watershed, a region referred to as the "North-West."

For over one hundred years, the Hudson's Bay Company had persuaded the Indians of the Western Interior to transport fur cargoes (principally beaver) to the Bay, but as the French free-traders penetrated westward beyond the Great Lakes and on to the Red River region of Manitoba, the Hudson's Bay Company were forced to leave their tranquil posts on the Bay and move inland in an attempt to intercept furs that were filtering south to the French traders. Prior to the French entry the Indians had transported fur cargoes to the Bay via the vast system of lakes and inland waterways in birch-bark canoes, constructed from the bark of the Betula papyrifera of the mixedwood boreal forest. When the French were defeated in Lower Canada in 1760, the English and Scottish merchants, based in Montreal proceeded to occupy the fur-trading positions occupied by their predecessors. These British-born free-traders formed the North-West Company in 1783-1784. Nearly thirty years of bitter competition between the Hudson's Bay Company and the North-West Company ensued on the fur-frontier of the Western Interior (Rupert's Land and the North-West Territory) until the two firms amalgamated in 1821.

It was during this era of rivalry that approaches were made by employees of both companies to areas lying within the Arctic watershed. The Lake Athabasca region of north-eastern Alberta was well known as a fur-rich territory by the Hudson's

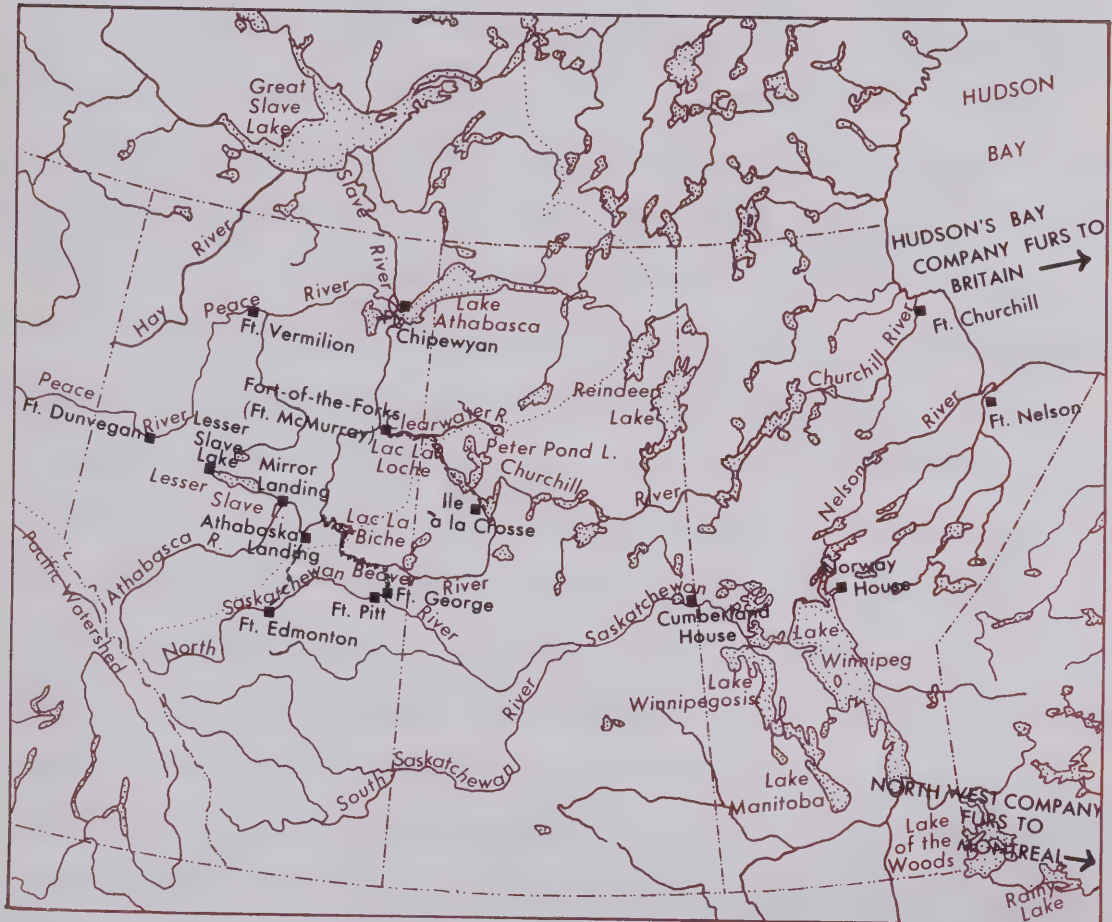


Bay Company prior to the turn of the nineteenth century. The problem had been to find a direct, short route from Fort Churchill on the western shore of Hudson's Bay to the Lake Athabasca region. Attempts were made to penetrate the Churchill River. However, the rapids were too difficult to navigate and this route proved impractical.

In 1778, Peter Pond, an employee of the North-West Company had crossed the La Loche summit: the height of land dividing the Athabasca and Churchill drainage systems, (Map 3.1). The La Loche route, providing entrance to the Athabasca River, Lake Athabasca and the Peace and Mackenzie River systems, was in constant use until 1886. This route ran northward from Cumberland House to the Churchill River, then up the Churchill to Ile-à-la-Crosse, a North West Company fur-trading post (Map 3.1). From Ile-à-la Crosse the North West fur-traders canoed across Peter Pond Lake and on up to Lac La Loche, then over a short portage (fourteen miles) to the Clearwater River, a tributary of the Athabasca.

A second route to the Athabasca River was opened in 1857 by Archbishop Taché utilizing the North Saskatchewan River system. When the La Loche portage transportation facilities became overtaxed during the mid-1850's, Archbishop Taché decided to develop his own transportation facilities and route to service the Roman Catholic missions on Lake Athabasca (Ells, 1939, p. 331). The North Saskatchewan was taken upstream as far as Fort Pitt, then a portage was made northward to the Beaver River (Map 3.1). At this juncture the





WATERWAY AND OVERLAND TRANSPORTATION ROUTES  
INTO THE ARCTIC WATERSHED OF THE WESTERN INTERIOR

Fur-traders route — — — — — Watershed Boundaries .....  
Taché's route xxxxxxxx

100 50 0 100 200 300  
Miles

Map 3.1



Beaver River was penetrated as far as possible and another portage was made to Lac La Biche. Supplies were then shipped across Lac La Biche, down the La Biche River to the Athabasca River and northward to Lake Athabasca.

A third route to Lake Athabasca had been discovered by David Thompson an employee of the Hudson's Bay Company, as early as 1799, but the overland route between Edmonton and a point on the southern bend of the Athabasca River was not developed until the 1880's (MacGregor, 1966, p. 23). The arrival of the Canadian Pacific Railway at Calgary in 1883 played a significant role in altering the transportation routes to the Athabasca region. The La Loche and Lac La Biche routes were abandoned in 1886 following the completion of a wagon road from Edmonton to a point on the Athabasca River nearest to Edmonton. Two years before the completion of the wagon trail, the Hudson's Bay Company had chosen the site on the Athabasca as a distribution centre for the northern fur trade, (Northern News, March 18, 1911, p. 1). The new settlement, named Athabaska Landing<sup>8</sup> became a break-of-bulk point on northbound freight designated for the Hudson's Bay Company's

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<sup>8</sup>The name of the settlement was changed from "Athabaska Landing" to "Athabasca" in 1905. The "k" in "Athabaska" was eventually replaced by a "c." The town of "Athabaska" was referred to as "Athabaska Landing" throughout the early fur trading period and the initial agricultural settlement period (1904-1915). The name "Athabaska Landing" has been retained in this study when referring to the town. "Athabasca" will be used when referring to the study area, the river, and the lake which bears this name.



fur-trading posts on Lake Athabasca and the Peace River region. Supplies were shipped to Calgary by rail, then hauled overland to Edmonton and on to Athabaska Landing where they were transferred to scows and later steamers and scows to be taken either downstream to Lake Athabasca or upstream to the west end of Lesser Slave Lake.

The penetration by the Canadian Pacific Railway as far as Calgary in 1883, was directly responsible for the emergence of a small Hudson's Bay Company transportation depot and fur trading post on the southern banks of the Athabasca River one hundred miles north of Edmonton. With the advent of the steam-driven locomotives the watercourse routes were abandoned whenever the railway provided an alternative route. By 1891, the three hundred mile overland freight trek by wagon between Calgary and Athabaska Landing had been lessened to one hundred miles with the arrival of the Canadian Pacific Railway at Strathcona (South Edmonton). As the northern terminus of the Athabasca Trail, the transshipment depot of Athabaska Landing was the freight portal to-and from the northern territories. It is no wonder that this settlement was hailed as the legitimate "Gateway to the North."

#### Athabaska Landing's Function as a Distribution Centre and Transshipment Depot

One of the first accounts of Athabaska Landing was by Somers Somerset who passed through the settlement in 1893. He noted that "Beyond the warehouses, offices and



Mr. Wood's<sup>9</sup> residence there are no buildings although most of the year there is a large Indian encampment near by." (Somerset, 1895, p. xxii). These buildings described by Somerset were undoubtedly all owned by the Hudson's Bay Company and were sited in the one square mile of land claimed by the Company. The 1898 river-lot survey reveals a number of buildings both within and outside the Hudson's Bay Company Reserve (Map 3.2). The warehouses were sited at the River's edge while the Hudson's Bay store, offices and the employees' residence were situated some distance south of the river bank (Map 3.2).

The 1898 settlement survey, which laid out sixteen rectangular lots that varied in shape and size because of the configuration of the river channel, reveals a number of buildings lying outside the Reserve and lining the river. Mr. Johnson, a fur-trader and boat builder, had established a private business on Lot 1 West, adjacent to the Reserve.

The construction of the Edmonton-Athabaska Landing Trail (usually referred to as the Athabaska Landing Trail) in the late 1880's, soon became the dominant route for entry into the Peace, Athabasca and Mackenzie River regions. The Trail was not only used by the Hudson's Bay Company, but by a number of competitive fur-trading firms who had moved in to the Athabasca, Peace and Mackenzie River districts. Sup-

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<sup>9</sup>Mr. Wood was an employee of the Hudson's Bay Company. He was in charge of the Company's operations at Athabaska Landing.



# PLAN OF RIVER LOTS — AT — ATHABASCA LANDING ALBERTA

Scale 20 Chains to one inch

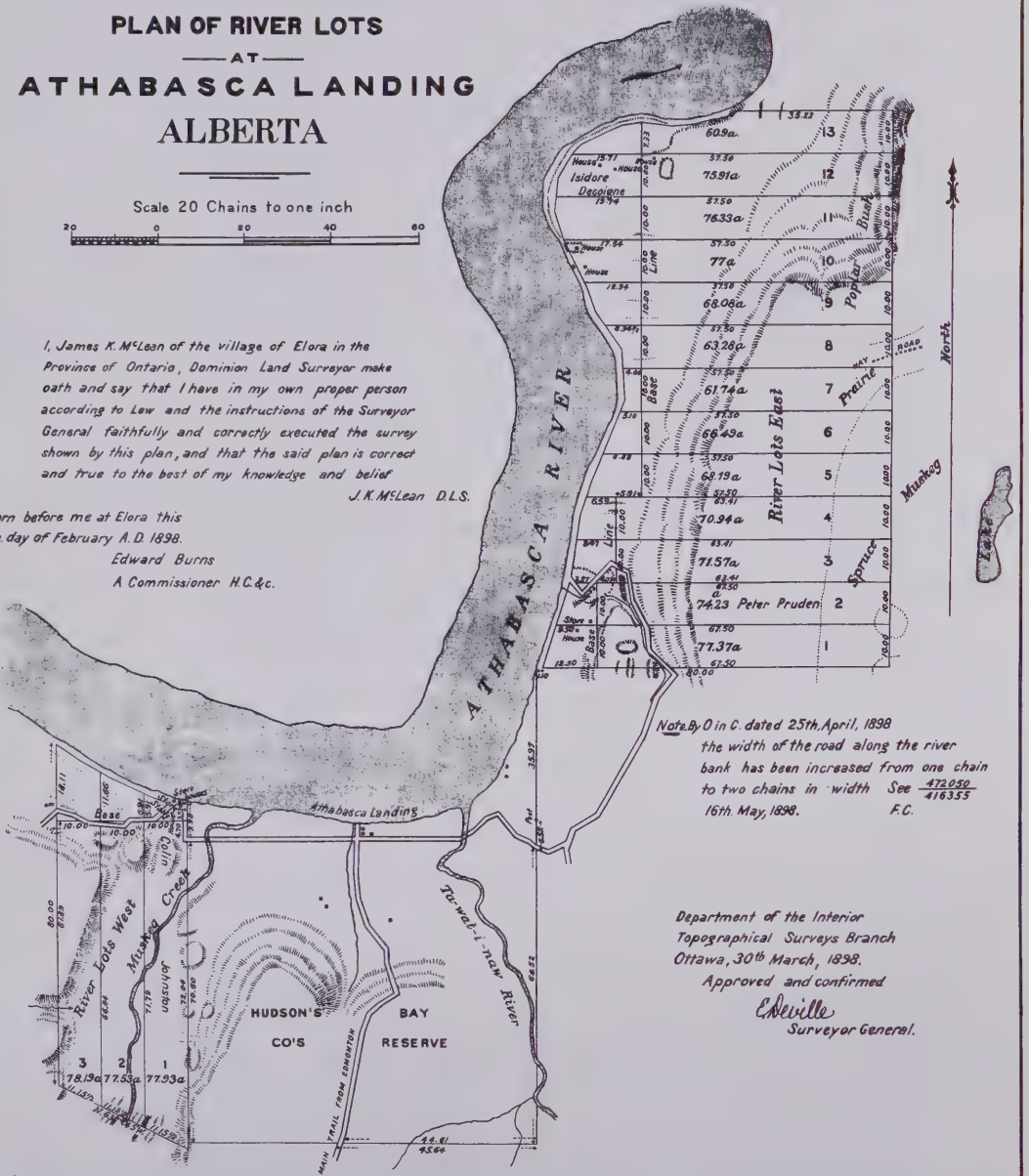


I, James K. McLean of the village of Elora in the Province of Ontario, Dominion Land Surveyor make oath and say that I have in my own proper person according to Law and the instructions of the Surveyor General faithfully and correctly executed the survey shown by this plan, and that the said plan is correct and true to the best of my knowledge and belief

J.K. McLean D.L.S.

Sworn before me at Elora this  
12th day of February A.D. 1898.

Edward Burns  
A Commissioner H.C. & C.



Note: By O in C. dated 25th April, 1898  
the width of the road along the river  
bank has been increased from one chain  
to two chains in width See 472050  
476355  
16th May, 1898. F.C.

Department of the Interior  
Topographical Surveys Branch  
Ottawa, 30th March, 1898.  
Approved and confirmed  
E. Heville  
Surveyor General.

PHOTO-LITHOGRAPHED AT THE SURVEYOR GENERAL'S OFFICE, OTTAWA, CANADA  
REPRINTED AT THE OFFICE OF THE DIRECTOR OF SURVEYS, EDMONTON, ALBERTA, 1953.



plies and provisions for the northern fur-trading posts and missions were shipped over the hundred mile Athabaska Landing Trail from Edmonton to Athabaska Landing. At this point they were transferred to flat-nosed scows or "sturgeon-noses" and steamers for shipment to the northern posts (Photo. 3.1). On the return trip from the north the scows and steamers bore fur freight.

Most of the trading goods and provisions were freighted to Athabaska Landing during the winter when a blanket of snow permitted easier movement of heavy cargo. Freight shipments northward usually commenced the first week of May with the break-up of ice on the Athabasca River. The volume of freight bound downstream from Athabaska Landing to the Lake Athabasca and Mackenzie River districts was always much greater than that destined for Lesser Slave Lake and the South Peace River region. In 1908, William Pearce (1908, p. 7) reported that six-hundred tons of freight went down the Athabasca River during the navigation period, which extended from approximately the first of May to the first of November. That same year, only twenty tons of fur freight and baggage came upstream to the Landing from the Lake Athabasca region (Pearce, 1908, p. 7). In 1907, an estimated one thousand tons of freight passed through Athabaska Landing (Pearce, 1908, p. 7). Based on these figures, it becomes clear that the volume of goods shipped upstream from Athabaska Landing to the Lesser Slave Lake area and points beyond was significantly less than



Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton

Fur-Traders Leaving Athabaska Landing for the North, 1898

Photo. 3.1







Hudson's Bay Company's Steamer, "Athabasca," 1898

Photo. 3.2

Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton.



the volume of freight shipped downstream.

Although the Hudson's Bay Company had favoured the use of York boats on the waterways in the Western Interior, they were impractical on the Athabasca River because of "their stiff construction and relatively deep draft" (Ells, 1939, p. 332). The York boats were incapable of navigating the turbulent rapids and shallow waters of the Athabasca River. The "sturgeon-noses" or simply the "sturgeon scows," were constructed on the banks of the Athabasca River at the Landing (Photo. 3.2). They were designed specifically to break the shallow rapid waters of the Athabasca River. These boats were open, square-ended and varied in length from twenty to fifty feet (Ells, 1939, p. 332). The scows were usually twelve feet in width (Cameron, 1910, p. 52). A twenty foot scow could carry five tons of freight and a fifty foot scow, some nine tons (Ells, 1939, p. 332). Oars, twenty feet in length were used to guide the scow and a forty-foot steering sweep was mounted with an iron pivot on the stern (Cameron, 1910, p. 52). The bowsmen and steersmen were able to control the scow with great success in turbulent waters when travelling downstream. Freight bound upstream, that is into the Lesser Slave Lake region, or into Athabaska Landing from the Lake Athabasca area, was carried in scows and pulled by "tracking" crews composed of Metis and Indians (Photo. 3.3). Manilla lines, one inch in thickness and five-hundred feet in length were harnessed to these men by canvas or leather breast straps and then fastened to the scows which were pulled





Woods and McNeil Boat Yard, Athabaska Landing, 1898

Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton.





Tracking on the Athabasca River, 1898

Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton

Photo. 3.4



upstream. Twenty-foot scows would have seven men "tracking" and fifty-foot scows would usually require ten men pulling upstream. Scows usually travelled in brigades, so that when heavy waters were encountered the crew from one scow could assist the tracking teams of another scow.

As the volume of freight increased on the Athabasca River, flat bottomed stern-wheel steamers were introduced (Photo. 3.2). Although these steamers could carry five to six times more tonnage than the fifty-foot scow, they did not replace the use of the scow entirely (Ells, 1939, p. 332). The stern-wheelers operating downstream from Athabaska Landing could only penetrate as far as the Grand Rapids, a distance of about one-hundred and sixty miles. A sixty-foot vertical drop in less than half a mile necessitated the transfer of freight from steamer to scow (Canada, Department of the Interior, 1916, p. 16). The ninety-mile stretch of rapids between the Grand Rapids and Fort McMurray could not be navigated by steamer, so the scow was the only feasible mode of transportation.

Occasionally the scows "ran" the rapids instead of portaging when travelling downstream (Photo. 3.5). It took skilled bowsmen and steersmen to "run" the rapids successfully when loaded with freight.

At the turn of the twentieth century, Athabaska Landing was a bustling transshipment and navigation depot. The Metis and Indians who "tracked" for the Hudson's Bay Company



Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton

Photo. 3.5



"Running" a Scow over a Rapid on the Slave River



and other fur-trading enterprises, had gravitated to the Landing. Most of the Metis and Indians "squatted" on the Hudson's Bay Company Reserve in tents and shacks. During the Klondike gold rush of 1898-1899 many prospectors pushed northward from Edmonton over the Athabaska Landing Trail. Large encampments arose on the northern banks of the Athabasca River across from the Landing in the spring of 1898. (Photo. 3.3).

After 1900 a few agricultural settlers began to pass through Athabaska Landing on their way to the Grande Prairie and Peace River areas. Infiltration of homestead claimants in the Athabaska Landing area reached a climax in 1911. Although the Landing was still a major break-of-bulk point and important transportation and distribution centre for the fur-trade, its role as an agricultural service centre became increasingly important during the initial settlement period (1904-1915). By 1911 the study area had a population of 780 (Canada, D.B.S., 1946, Report on the Census of the Prairie Provinces) and Athabaska Landing a total of 227 persons or 29.1 per cent of the total population (Canada, D.B.S., 1961, 1966, Population, Incorporated Cities, Towns and Villages).

#### Preparation of Public Lands for Agricultural Settlement in the Study Area

The decision by the Canadian Government to purchase



Rupert's Land and the North-West from the Hudson's Bay Company in 1868, and its subsequent transfer to the buyer in 1870, marked the advent of a "clear-cut experiment in agricultural colonization" (Mackintosh, 1934, p.3). This "clean-cut experiment" was enhanced by the Canadian purchase of the Hudson's Bay Company's chartered territory in one day and later by the government's decision to survey this vast area into uniform blocks. By 1871, the Canadian government had designed their survey along the system adopted and utilized by the United States. The area of the section had been fixed at six hundred and forty acres and the township at thirty-six sections with each section one square mile in area. The forty-ninth parallel was used as the base line and the townships were numbered north from this latitude. The legal subdivisional unit was normally one hundred and sixty acres in size, although the quarter-sections could be sub-divided further into sixteen ten acre lots.

The introduction of the free homestead system, which granted individual settler entry onto one quarter section of land for a ten dollar fee, served to effectuate the Canadian government's objectives: to fill the vast empty spaces of the Western Interior as quickly and efficiently as possible. The government's objectives were, for the most part, successful.

The first grid survey team to enter the Athabasca study area, to prepare the area for orderly agricultural settlement, did so in 1904. Within a period of four years



the nine townships of the study area had been platted. With the exception of sections eleven and twenty-nine in each township which were reserved as School Lands by the Crown, and the one-square mile Hudson's Bay Company's Reserve, the remaining land was opened for homesteading. The School Lands had been set aside as an endowment for the purposes of public education. Revenues in the form of rentals, leases and interest derived on deferred payments were used by the pioneer communities to alleviate the often heavy burden of education costs. If School Lands commanded a high enough price they were often sold by auction at the discretion of the Department of the Interior. Martin (1939, p. 336) has stated that

"The revenues from the school lands have been the highest, the cost of administration the lowest, the endowment as a whole perhaps the most praiseworthy and discerning among all the forms of general land policy. . . ."

Virtually every intending agricultural settler who claimed land in the Athabasca area did so on the quarter-section basis as outlined in the homestead regulations. After 1909 South African Veterans Scrip was opened to veterans of the Boer War on an half-section basis. These larger parcels of land were "taken-up" by ex-servicemen living outside the Athabasca area, who sold the land to speculators or other settlers within the immediate vicinity. On the basis of the random sample (129 members) only 1.5 per cent of the land in the study area was South African Scrip.

There were no railway land grants in the study area,



as this policy had been abandoned by the federal government in 1893. No Hudson's Bay Company lands were granted beyond the Reserve as the Company's right to retain one-twentieth of the land that was transferred to the Dominion of Canada applied only to the "fertile belt" or area which extended from the forty-ninth parallel northward to the North Saskatchewan and Souris River valleys.

Although the provinces of Alberta and Saskatchewan were created in 1905, the administration of public lands within these new political entities was retained by the federal government "for the purposes of the Dominion". (Statutes of Canada, Manitoba Act, 1870. 33 Vict., c.3 s., 30). Homestead lands were administered by the federal government's Department of the Interior until 1930, when the provincial governments of the Western Interior gained jurisdiction over their own natural resources, including public lands.

#### Advertising Athabaska Landing and District

In addition to governmental and railway promotional literature which presented glowing accounts of 'cheap, fertile land' in the Canadian West, the local newspapers and Boards of Trade in the small communities often propagated the seemingly limitless economic opportunities available within their town and district. The centre of Athabaska Landing, which had functioned as a transshipment depot and distribution centre since 1883, suddenly realized at the turn of the century that it could well become the dominant service centre



for "the north." At this time, the vast Canadian north was attracting the attention of the agriculturist, the prospector, the oilman and the lumberman. The fur-trade was still competitive in the north and the volume and value of fur export from the Peace, Athabasca and Mackenzie River basins was still significant.

The publication of Athabaska Landing's first newspaper in November 1908, marked the advent of that centre's "promotional banner." In the first edition, the editor, the Reverend F. W. Moxhay stated that Athabaska Landing was soon to become "the true centre of the north;--the Embryonic Babylon of the West," (The Northern Light, November 28, 1908). The Northern Light was replaced by the Northern News in January, 1909. The new editor, Mr. J. C. MacQuarrie boasted that the Northern News was the most northerly weekly newspaper east of the Rocky Mountains, and it was established to serve the "interests of Athabaska Landing and the Last West." Like a great number of men, MacQuarrie appeared convinced that Athabaska Landing was to flourish as the primary distribution centre for a vast developing territory. Furs which passed through the Landing annually were estimated to have been "well over three quarters of a million dollars." (Northern News, May 12, 1910, p. 1). Although the handling of supplies and furs dominated business life at the Landing, some one hundred tons of fish were exported through this distribution centre as well, (Pearce, 1908, p. 7).



The flurry of activity on the banks of the Athabasca River throughout the freighting season and the passage of "countless" prospectors, agriculturalists and adventurers through the Landing on their way to the Canadian "North" quickly convinced local businessmen and patriotic citizens of the Landing that their village was destined to become the true "Gateway to the North." Recognizing that the village's function as a break-of-bulk depot would not necessarily encourage rapid urban development, local "capitalists" embarked on a course of action attempting to draw industry, trade and commerce northward from the flourishing centre of Edmonton. The Northern News boldly asserted that within the near future, Athabaska Landing would become the third largest city in Alberta, (Northern News, May 13, 1911, p. 1.)

The local newspaper and later the Board of Trade advertised the excellent investment opportunities available in the Landing (Appendix I). The advertisements were so convincing that heavy investments in real estate were made within the village and land far removed from the core of the settlement was sub-divided and sold to private investors.

The Landing promoters cited the wealth of natural resources awaiting private exploitation and stressed the importance of the town as a transportation centre. This function became increasingly important when the Landing had been assured railway access to the outside markets of the world. An announcement in March, 1909, (Northern News, March 4, 1909,



p. 1), that the Canadian Northern Railway would extend their line northward from Morinville to Athabaska Landing strengthened the promoters' patter. Behind every attempt to lure capital investment was the promise of a rail connection with the outside world. Indeed, Athabaska Landing was to become the railway centre of central (geographically speaking) Alberta and the "inland port" for over three thousand miles of waterway which extended northward to the Arctic Ocean.

The discovery of coal some twelve miles from Athabaska Landing and natural gas within the townsite (1908) prompted the Northern News to predict that sometime soon, the Landing would be a flourishing industrial centre. Natural gas was viewed as a potential source of cheap power, lighting and fuel for the anticipated industries. A fish processing plant, a pulp mill, lumber mills, brick and cement manufacturing and flour mills were all anticipated to enter the Athabasca area during the initial settlement period (1904-1915). The only industry to establish in the Landing were saw-milling firms. By 1908, a small mill was producing 15,000 B.M. (board measure) of lumber per day (Pearce, 1908, p. 8). The mill received its log supply from along the banks of the Athabasca River upstream. By 1911, there were two local saw mills in the Landing which served the local demands. The construction of scows and steamers on the banks of the Athabasca River kept the local sawmills busy. Although repeated forest fires had levelled or severely charred the better stands of spruce and tamarac in the vicinity of the Landing, this fact did not



deter the promoters from claiming that "Our timber resources have as yet only been touched owing to the lack of an outside market." (Northern News, January 9, 1910, p. 1).

The excellent argillaceous clay and the availability of limestone locally, had favoured the establishment of a brick factory at the Landing in 1913 (Northern News, January 15, 1913, p. 1). This factory produced 15,000 bricks per day.

Besides efforts to attract new industrial enterprises the editor of the Northern News envisioned the Landing as "the commercial as well as the actual centre of the fur buying industry" of Alberta, (Northern News, January 9, 1910, p. 1). On another occasion editor MacQuarrie's successor Robert F. Truss stated that

"the fur trade that has carried millions of dollars into Edmonton for the past thirty years will from now on be made at Athabaska Landing; it means that wholesale houses will be built here to supply the exchange; it means that powerful river tugs will be built here to work up the trade along this water system; it means that as this great country fills up, villages and towns will spring up along the shores of the Athabaska at distances of ten to fifteen miles apart and their supplies will reach them by water from this distributing point." (Northern News, January 7, 1911, p. 1).

He superficially qualifies this assertion by stating that

"All these things . . . will happen at Athabaska Landing in the natural course of events, because in the very nature of things they can not help themselves."

The air of optimism espoused by the promoters was occasionally challenged by those citizens of the town and district who accused the local boasters, particularly the real estate men, of phoney advertising. Inflated property values according to the "knockers" or critics, were giving



General View of Athabaska Landing, 1911

Source: The Ernest Brown Collection,  
Courtesy of the Provincial Archives,  
Edmonton





adverse impressions of the town. People "from a distance" who had purchased lots found upon inspection of the same, that they had made a bad investment and naturally left the town disgruntled, (Northern News, August 3, 1912, p.1).

Letters to the editor of the Northern News who claimed that the town would soon be "on the bum" were reprimanded in the following manner; ". . . if there are any places on the map where nature intended a city this is one of them." (Northern News, March 11, 1911, p.1).

As efforts were being made to bolster Athabaska Landing's image, the City of Edmonton was advancing as the dominant growth point and principal distribution centre for "The North." Undaunted by Edmonton's imminent domination, Truss assured local readers that businessmen with money predicted Athabaska Landing would "eventually be the fifth city west of the great lakes in Canada." (Northern News, May 31, 1911, p.1).

#### Promotion of Agriculturally Based Economy

Besides attempts to attract trade, commerce and industry, the Northern News hailed the Athabaska Landing area as the agricultural "Garden District of Central Alberta," (Northern News, August 6, 1910, p.1). By this time, cereal grains had been grown successfully in the area. The abundant yields of 1910 had inspired the editor of the Northern News to claim ". . . the grain growing qualities of the soil in this vicin-



ity are such that wheat raised here is superior even to that grown in the central part of the province." (Northern News, August 6, 1910, p.1). By July 9, 1910, oats were 43 inches high on land two and one-half miles from Athabaska Landing and the editor inferred that this growth had ". . . No Peers in the Province." (Northern News, July 14, 1910, p.1). By August 1, the "Average measurements of grain in this district . . . were Wheat, five feet; Oats fifty inches; Rye sixty-eight inches; Barley five feet; Alfalfa sown May 20th thirty inches; Red Clover twenty-nine inches." (Northern News, August 6, 1910 p. 1). The native pea vine had "attained a height of seven and eight feet" by early August, 1910. (Northern News, August 5, 1910, p.1).

The 1910 wheat crop in the Athabasca district had averaged twenty-six bushels per acre, oats sixty-one bushels per acre and barley thirty-eight (Northern News, March 18, 1911, p.1). Needless to say, most of this grain was grown on "new breaking" under ideal climatic conditions throughout the growing season. One farmer in the Pine Creek community to the east of the Landing, claimed that he "sold \$900.00 worth of farm produce grown on his land during 1910 . . . ." (Northern News, February 11, 1911, p.1). The detailed account of his earnings with only thirty acres under cultivation are indicated below:



200 bu. Orloff Oats (seed) 75¢ . . . . .	\$150.00
30 tons Timothy Hay at \$8.00 . . . . .	240.00
10 tons Baled Hay at \$10.00 . . . . .	100.00
18 tons Oat Hay at \$10.00 . . . . .	<u>180.00</u>
Total	670.00
230 bush. potatoes still on hand worth in spring market	<u>230.00</u>
Making Grand Total . .	\$900.00

With the successful crop reports of 1910, both the incoming and established homestead entrants were urged to grow wheat, the crop that would "Boom the Landing." (Northern News, February 4, 1911, p. 1). The newly signed Reciprocity Treaty between Canada and the United States and the promise of a railway linkage were further incentives to raise wheat which could now be sold competitively on the "free market" throughout the world.

Although mixed farming was advertised as a suitable and profitable agricultural pursuit by the Dominion Land Surveyor's, the editor of the Northern News claimed that ". . . the best wheat country in the west . . . ." (Northern News, June 24, 1911, p. 1), surrounded Athabaska Landing. On the basis of one successful crop year (1910) the Northern News was so bold as to assert that "Here we have the very choicest soil that can be had in Alberta on all sides of us, North, South, East and West." (Northern News, March 11, p. 1). Such highly generalized statements were completely divorced from reality, yet they served to instil optimism in the future of agricultural settlement in the area.



Railway Linkage--The Key to the Anticipated "Boom"

For the most part, those who promoted real estate in Athabaska Landing maintained that once the Landing had rail connections with Edmonton, the Town's function as a major distribution centre would of necessity be enhanced. As a railway terminus, Athabaska Landing could indeed become the "true portal to the North." Like most western Canadian towns, Athabaska Landing looked to a railway outlet as the most important asset bestowed upon any community. Although the town had been assured rail linkage with Edmonton in 1909, it was not until December, 1911 that the Provincial Liberal administration unveiled a railway policy that had special implications for northern development. The Landing was expected to become the most important railway terminus in north-central Alberta. Access to five railway outlets was envisioned for the Landing. The Trans-Canada Pacific and Hudson's Bay Railway Company had planned to construct a railway from Hudson's Bay to the Peace River area via Athabaska Landing; the Canadian Pacific Railway had proposed an extension from Wilkie and Lloydminster to the Landing; and the Canadian Northern Railway was in the process of building a line from North Battleford to Athabaska Landing (Northern News, December 9, 1911, p. 1). The fifth line and the only one ever completed to Athabaska Landing was the Canadian Northern's rail extensions northward from Morinville.

The Canadian Northern Railway's extension from Morin-



ville northwest to the Peace River region via Fort Assiniboine, an abandoned Hudson's Bay Company post, annoyed the promoters of the Landing, who reckoned that their bustling centre should be served first. The decision to construct the Alberta and Great Waterways Railway to the Fort McMurray area (Waterways became the terminus) raised hopes that the line would be extended northeastward from the Landing. The route skirted the Athabasca area and once again the aspirations of the Landing's promoters were dashed. Although the promoters of Athabaska Landing resented the fact that all the railway lines proposed for the northern portion of the province radiated from Edmonton, the editor of the Northern News dejectedly stated that

"There is no doubt that any such proposal (to make Athabaska Landing a railway centre) would be opposed by the City of Edmonton, which being the capital city will always have a large influence in provincial politics in this province." (Northern News, November 18, 1911, p.1)

When the Canadian Northern Railway finally reached the Landing in November 1912, this marked the northernmost advance of steel on the American continent. This claim was short-lived. The completion of the Alberta and Great Waterways Railway northeastward from Edmonton to Waterways on the Clearwater River, in 1920, effectively ended water transportation activity downstream from Athabaska Landing. The Athabasca area was not only skirted by the Alberta and Great Waterways Railway, but also by the Edmonton District and British Columbia Railway which extended northward from Edmonton to Mirror



Landing (Smith) and on into the Peace River area via the south shore of Lesser Slave Lake. Athabaska Landing was left stranded between two 'lines of steel.' Freightng both upstream and downstream from the Landing completely ceased in the mid-1920's. The centre's role as a transshipment depot had vanished and her claim as the "Gateway to the North" was soon obliterated. Edmonton had always been the dominant distribution point for the fur-trade and when rail connections were completed between the Peace River and Lake Athabasca regions, this city became the "Gateway to the North."

#### Impact of Local Advertising

The publication of the weekly newspaper, the Northern News, which constantly bombarded its readers with Athabaska Landing and district's past successes and the golden opportunities for the future, undoubtedly had a significant influence on intending homestead entrants. Many settlers bound for the famous Peace River country were encouraged by local promoters in the Landing to claim homesteads within close proximity to a centre that was destined to become a large city and a railway centre. In an article entitled "Why go to Peace River? Why not Athabaska Landing?", (Northern News, February 18, 1911, p. 1), R. F. Truss claimed that the Peace River area lacked railway outlets, and was generally isolated from the settled parts of the Province. He stated that homesteaders in the Athabasca area objected to settling ten to



twelve miles from town, but in his address to the intendent homesteader bound for the Peace River region, he stated

"Better fifteen or eighteen miles from a railroad and know it's there than take a long chance of three hundred or four hundred miles and wear your lives out on the trail year after year awaiting for it (railway) to come to you."  
(Northern News, February 8, 1911, p.1)

Recognizing that "prairie" could be homesteaded in the Peace, as opposed to scrubland and woodland in the Athabasca area, he claimed that ". . . a homesteader can clear quite a few acres of Athabasca land while he is going from here to Peace River, and surely the uncertainty should be considered."  
(Northern News, February 18, 1911, p.1).

The high freight rates<sup>10</sup> and poor mail service into the Peace River country were cited as further reasons why the "northward bound" homesteader should settle where the chances of early success were much greater. It is true that many homesteaders who had initially intended to settle in the Peace River block, thought better of their plans and upon reaching the Landing felt they had travelled far enough and decided to "take-up" a homestead in the Landing district. Some settlers had gone on to the Peace River country, then returned to the Landing district. High freight rates and no guarantee of a railway into the Peace River area had influenced at least one man's<sup>11</sup> decision to return south to the

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<sup>10</sup> One hundred pounds of flour cost between \$9-\$12 to ship from Athabaska Landing to the Peace River area. (Northern News, February 18, 1911, p. 1).

<sup>11</sup> Pers. Comm., Mr. I. Bausman. July, 1969.



Landing district.

Athabaska Landing gained widespread fame throughout parts of Canada and the United States during the initial agricultural settlement period, (1904-1915). Rev. Mr. A. E. Hopkins, Methodist Minister in Athabaska Landing came across copies of the Northern News while visiting Ontario, (Northern News, September 30, 1909, p. 1). At that time, he claimed that Athabaska Landing was "among the most talked of 'coming' western towns." (Northern News, September 30, 1909, p. 1).

The Board of Trade's 1910 pamphlet (Appendix I) glorifying the potential prosperity that was soon to be experienced in Athabaska Landing and district was distributed throughout the United States, the British Isles and Canada. The material contained within the pamphlet was also published in The Edmonton Bulletin, The Winnipeg Free Press, the Toronto Globe, The Family Herald and Weekly Star of Montreal, and The Canadian Mail, London, England. (Northern News, February 11, 1911, p. 1). These advertisements were designed in such a manner as to attract a desirable class of settlers and artisans to the district.

Perhaps even more important than early newspaper accounts, were the stories that portrayed unavoidable success and prosperity to anyone who invested capital in Athabaska Landing or "took-up" a homestead in its immediate vicinity.

It is virtually impossible to ascertain the degree of influence that the Northern News and Board of Trade's promotional literature had upon the intending agricultural settlers



decision to homestead in the Athabasca vicinity. The majority of the initial homesteaders are either no longer living within the Athabasca area or are deceased. Nonetheless, innumerable accounts of past successes by local entrepreneurs and agriculturalists undoubtedly had some influence on the intending homesteaders' decision to settle within the Athabasca district.



## CHAPTER IV

### THE RELATIONSHIPS BETWEEN TIME OF INITIAL HOMESTEAD ENTRY AND SELECTED DISTANCE VARIABLES

#### Introduction

The existence of the settlement of Athabaska Landing prior to the intrusion of the first bona fide homesteader has permitted the measurement of the degree of influence that this well-established transshipment and distribution centre had upon the process of initial rural settlement. The following analysis will examine whether rural settlement penetrated outwards from Athabaska Landing in a progressive ring-like fashion, irrespective of physiographic variations.

In addition to measuring the influence Athabaska Landing had upon the process of rural settlement, the nature and degree of the relationship between the "time of initial homestead entry"<sup>12</sup> and the distance to the nearest wagon road or trail, the Athabaska Landing Trail, and the nearest railway depot (Athabaska Landing or Colinton) has been investigated.

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<sup>12</sup>The time of "initial homestead entry" refers to the first time a quarter-section of land was entered upon by a settler, (homesteader).



The form or nature of the relationship between these distance variables and the time of initial homestead entry have been presented in scattergram form, complete with the linear regression line. The degree of the relationship between time of initial homestead entry and the various distance variables will be expressed as linear correlation coefficients.

#### Time and Distance Calculations and Methods of Measurement

The manner in which "time" has been treated in the following analysis is somewhat novel. In order to determine the degree of influence "time" (as represented by homestead entry dates) had upon the locational decisions of the homestead entrants, the conversion of a "date" into an interval value was desirable in view of the statistical techniques that were employed, (i.e. linear correlation). Therefore, homestead entry dates were converted into a numerical value based on the "number of days ago," from January 1, 1970. These interval data permitted accurate correlations to be performed between homestead entry dates (and later land patent dates) and a number of independent variables, such as distance measurements. The conversion of dates into interval measurements was essential if an accurate analysis of time-distance





ROAD NETWORK PRIOR TO HOMESTEADING PERIOD

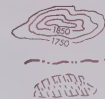
Major wagon road  
 Wagon roads  
 Pack trails  
 Cultivated land  
 Unimproved land  
 Boundary of the  
 Hudson's Bay Company Reserve



Contours

Stream, intermittent

Lake, intermittent



1 0.5 0 1 2 3  
 Miles

Source: Dominion Land Surveyor's  
 Notebooks, 1904-08.

Map 4.1



relationships were to be computed.

Two sets of distance measurements were calculated:

(1) actual distances and (2) straight line distances. All distance measurements were expressed in statute miles. Actual distances were measured with a planimeter and straight line distances with an ordinary straight-edge ruler. All distance measurements commenced at the centre of the eighty-five quarter-sections initially homesteaded during the initial settlement period (1904-1915).

The actual distances from each of the eighty-five quarter-sections to Athabaska Landing, the Athabaska Landing Trail, and the two railway depots (Athabaska Landing and Colinton) were calculated by placing the planimeter at the centre of each quarter-section and then "running" it over the existing wagon roads and trails (Map 4.1). The shortest route between the centre of each quarter-section and the cultural imprints (Athabaska Landing, Athabaska Landing Trail, etc.) was traversed. If the wagon road or trail did not pass through the centre of the quarter-section under investigation, the section lines were traversed by the planimeter to the nearest wagon road or trail. If swampy land was encountered between one quarter-section and the nearest wagon road or trail, the drier land (often the flutes) was traversed with the planimeter in an effort to render these actual distance measurements meaningful. Calculation of the actual distance to the nearest wagon road or trail, as an independent variable, was performed in the same way.



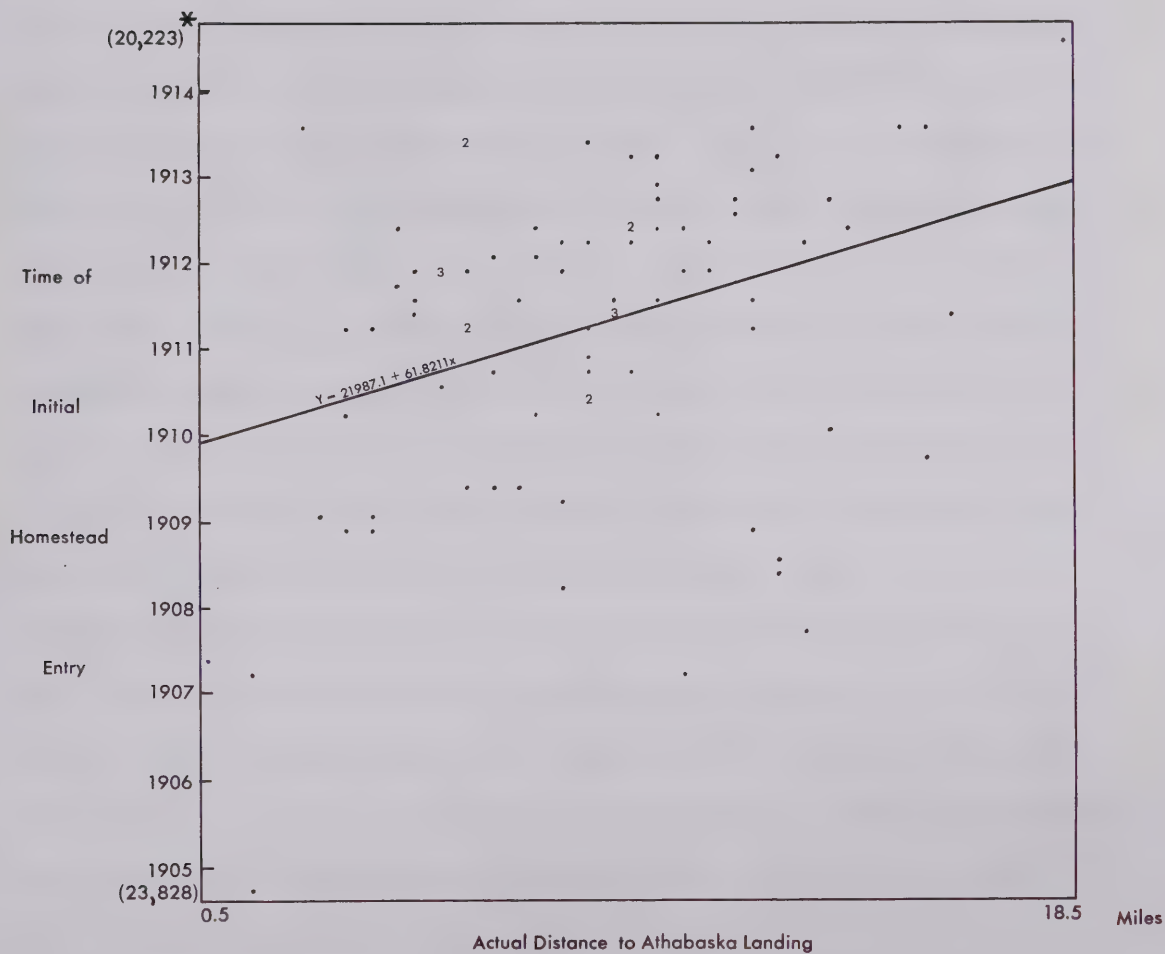
The second set of distance data, straight-line distances, were measured from the centre of each quarter-section (85) to Athabaska Landing, the Athabaska Landing Trail, the railway line, and the southern boundary of the study area. The distances from the quarter-sections in question to the southern boundary were calculated only on a straight-line basis.

Relationship Between Time of Initial Homestead Entry  
and Distance to Athabaska Landing

The time of initial homestead entry data for the time period 1904-1915, based on the interval measurement of "number of days ago" was found to be normally distributed, that is, 68 per cent of the frequency distribution of the homestead entry dates were between + or - one standard deviation. Likewise the frequency distribution of distance from Athabaska Landing (shown on the X axis in Fig. 4.1) is normally distributed (69 per cent lying within + or - one standard deviation). This bivariate normal distribution was subjected to a linear correlation analysis. Fig. 4.1 shows the amount of spread of the x and y intercepts from the linear regression line. The slope of the regression line indicates that there is a slightly positive relationship between time of initial homestead entry and distance from Athabaska Landing. Nonetheless, the range of points both above and below the regression line weakens the degree of relationship between these two variables. A linear correlation coefficient of



REGRESSION LINE FOR ACTUAL DISTANCE TO ATHABASKA LANDING  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-FIVE QUARTER-SECTIONS



\* 'Number of Days Ago'

Fig. 4.1



+0.348 was significant at the  $0.005^{13}$  probability level.

An examination of the scattergram (Fig. 4.1) shows that the very early homesteaders (those who entered the area prior to 1907), located within close proximity to the existing fur-trading and transshipment centre of Athabaska Landing. By mid-1907 parcels of land some distance from the Landing were claimed in preference to those lying within close proximity to the established centre (Fig. 4.1). The majority of those parcels of land entered on before 1910 and lying more than eight miles from the Landing, were located east of Colinton. Map 4.2 indicates all the parcels of land homesteaded within the entire study area by 1908. There is a clear indication that a number of parcels of land were initially claimed in the area east of Colinton and around the node of Athabaska Landing. The homestead lands disposed of by September 8, 1911 are indicated for the entire area on Map 4.3. The penetration of settlement outwards from Athabaska Landing is obvious when Maps 4.2 and 4.3 are compared. This overall trend of outward penetration of rural settlement from Athabaska Landing was shown in Fig. 4.1 by the slope of the regression line.

When the straight-line distances to Athabaska Landing were correlated linearly with the initial homestead entry dates, a Pearson product-moment correlation coefficient of

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<sup>13</sup>The Student's 't' test was used to calculate the level of significance for all the linear regression analyses performed in this study. (Blalock, 1960, pp. 144-146).





PUBLIC LANDS DISPOSED OF BY MID-1908

Homestead lands claimed



School lands reserved



Hudson's Bay Company  
Reserve



Lake



Lake, intermittent

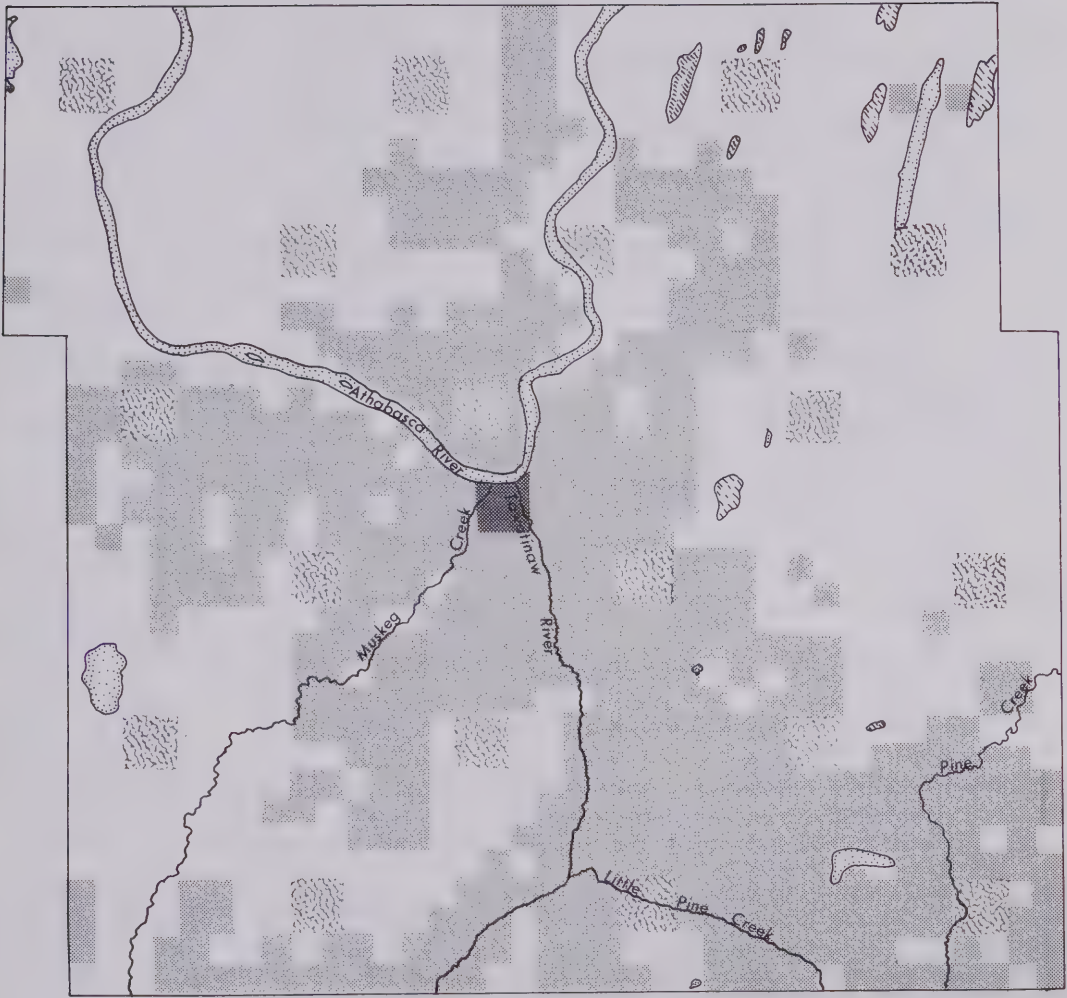


1 .5 0 1 2 3  
Miles






Source: Canada, Department of the Interior,  
Glenbow Foundation Archives, Calgary

Map 4.2





PUBLIC LANDS DISPOSED OF BY SEPTEMBER 8, 1911

- |                              |   |                    |   |
|------------------------------|---|--------------------|---|
| Homestead lands claimed      |  | Lake               |  |
| School lands reserved        |  | Lake, intermittent |  |
| Hudson's Bay Company Reserve |  |                    |   |
- 1 .5 0 1 2 3  
Miles

Source: Railway Land Map, R.E. Young D.L.S.,  
Glenbow Foundation Archives, Calgary

Map 4.3



+0.294 (significant at the 0.005 probability level) was obtained. This correlation coefficient varied insignificantly from the coefficient derived when the independent variable, actual distance, was subjected to linear correlation analysis.

The above correlation analysis did not take into account any topographical barriers which may have impeded uniform penetration of rural settlement outwards from Athabaska Landing. If the Athabasca River is considered such a barrier, and the seventy-two parcels of land initially entered upon before 1915 and lying south of this river channel are correlated linearly with the straight-line distances, the resultant linear correlation coefficient is slightly higher (+0.301) than when the entire eighty-five members were correlated (+0.294). The level of significance remained the same (0.005). When the sixteen parcels of land lying north of the Athabasca River were analyzed, a linear correlation coefficient of +0.587 (significant at the 0.010 probability level) was derived when straight-line distances to Athabaska Landing were plotted against time of initial homestead entry.

#### Effect of the Edmonton-Athabaska Landing Trail on Initial Homestead Penetration

The Edmonton-Athabaska Landing Trail was undoubtedly the most travelled overland transportation artery that passed through any portion of the study area, prior to agricultural settlement. The degree of relationship between initial homestead entry dates and the actual distance of the eighty-five



parcels of land from the Trail were relatively weak (Fig. 4.2). A linear correlation coefficient of +0.249 (significant at only the 0.01 level of confidence) revealed the relative unimportance of the Trail as a primary consideration on the early homesteaders locational decisions.

This degree of association between initial homestead entry dates and theoretical (straight-line) distance to the Athabaska Landing Trail for the fifty parcels of land lying directly to the east and west of the Trail, revealed a Pearson product-moment correlation coefficient (linear) of +0.010. This was significant at the 0.472 confidence level, which renders the correlation coefficient unreliable, as 47.2 per cent of the association between these two parameters could have occurred by "chance." Visual examination of Maps 4.2 and 4.3 reveals that land adjacent to the Trail was by no means the first to be homesteaded.

This lack of direct association between homestead entry dates and theoretical distance to the Trail is understandable when the positioning of the wagon road within the study area is considered. The Trail followed an old Indian pack trail on the crest of a flute that was flanked on either side by swamp and beyond that by other flutes. A short distance to the east of the Trail, the broken and rough slopes of the western flank of the Tawatinaw River Valley were encountered. The flutes south of Athabaska Landing were stoney, steep-sided, and arid. These adverse physical conditions,



**REGRESSION LINE FOR ACTUAL DISTANCE TO THE ATHABASKA LANDING TRAIL  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-FIVE QUARTER SECTIONS**

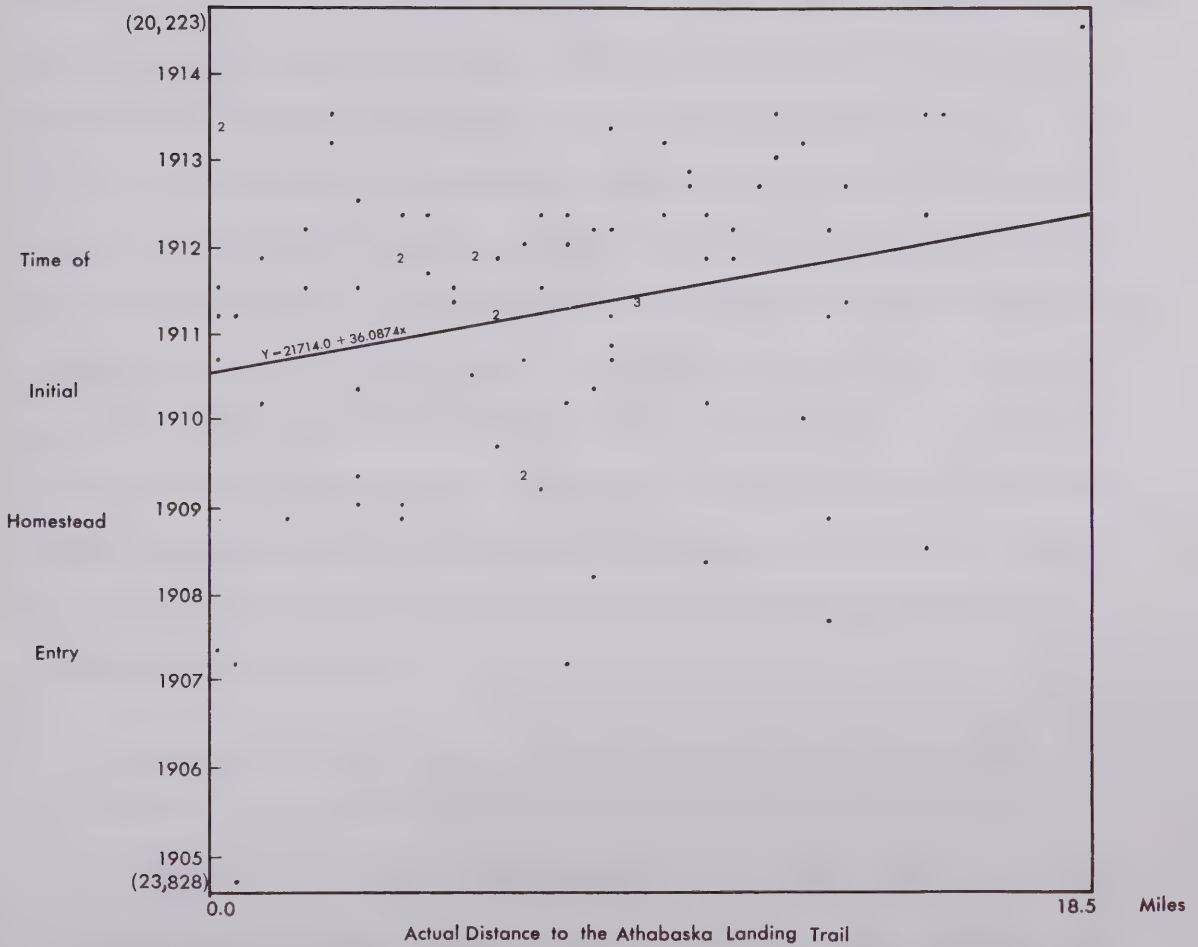


Fig. 4.2



coupled with the swamp troughs, did not encourage early homesteaders to settle in close proximity to the Trail. The editor of the Northern News was aware of this poor land adjacent to the Trail and in 1910 he commented that the "soil alongside the Edmonton-Athabaska Landing Trail" was not "exemplary of the whole country." (Northern News, January 9, 1910, p. 1). He stated that first-class agricultural land was to be found both to the east and to the west of the Trail, beyond the stoney and sandy soils of the flutes.

Contrary to a popularly-held belief that land adjacent to the Trail was homesteaded first, an examination of the homestead entry dates and the distance of the eighty-five parcels of land to the Trail, indicated that this cultural imprint had very little effect upon the process of initial agricultural settlement. A review of maps showing homestead lands disposed of by 1908 and 1911 (Maps 4.2 and 4.3) substantiates the weak influence the Trail had upon the rural colonization process.

#### The Effect of Distance to the Nearest Trail and the Time of Settlement

The relationship between time of homestead entry and the distance to the nearest trail or wagon road exhibits a stronger positive linear correlation than that obtained for the Athabaska Landing Trail. Prior to 1910, some 70 per cent of the claims that had been filed were three miles or less from an existing trail. The positively skewed distance dis-



tribution on the x axis (Fig. 4.3) stresses the fact that homesteaders generally did not advance to any great distance beyond the existing lines of transportation.

A linear correlation coefficient of +0.413 was computed, which was significant at the 0.005 probability level. This degree of association may be questionable, in terms of a possible alteration in the wagon road and trail network between 1904-1908. These years marked the survey of the first township (Twp. 66,R22,W4th in 1904) and the last townships (Twp. 67,R21,22,23, W4th in 1908) in the study area. However, it is unlikely that any major change in the transportation network occurred throughout his four year period.

#### The Railway's Influence on the Rural Settlement Process

The arrival of the Canadian Northern Railway at Athabaska Landing in 1912, had been preceded by a wave of agricultural settlers into the district surrounding the Landing. The railway's expectation as early as 1908, had undoubtedly had a bearing on drawing homesteaders northward. It had become evident that if a railway were to reach Athabaska Landing, the logical route was through the Tawatinaw River valley. This route provided the easiest access to the centre of Athabaska Landing which was sited at the confluence of the Tawatinaw with the Athabasca River. The degree of association between the time of homestead entry and actual distance from the two railway depots, Athabaska



**REGRESSION LINE FOR ACTUAL DISTANCE TO THE NEAREST WAGON ROAD OR TRAIL  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-FIVE QUARTER SECTIONS**

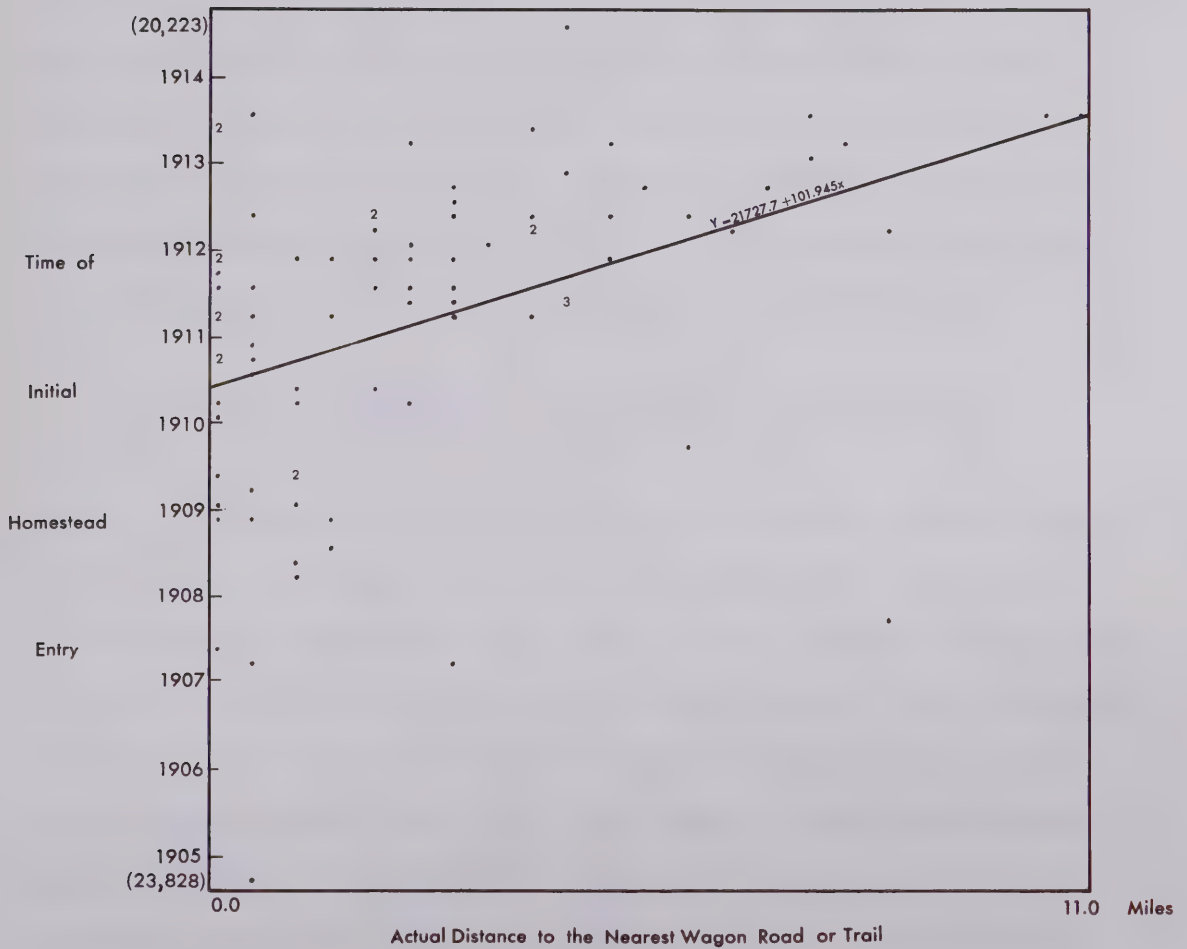


Fig. 4.3



Landing and Colinton showed a fairly strong positive correlation (Fig. 4.4). A linear correlation coefficient of +0.531, was determined and this value was significant at the 0.005 probability level. This relatively high correlation coefficient may be partially accounted for by the calculation of distance measurements to two nodes--Athabaska Landing and Colinton. As noted previously, homestead entrants moved into the area west of Colinton during the early stages of the initial settlement period (Map 4.2). This cluster of rural settlement coupled with the outward penetration of homesteaders around Athabaska Landing likely accounts for the relatively high value of the correlation coefficient.

#### The Question of Continuous Northern Penetration of Agricultural Settlement

Any notion that agricultural settlement pushed northward along a uniform east-west plane, was soon dispelled when time of homestead entry was plotted against the distance from the southern boundary of the study area. The dispersed scattering of the points on the scattergram and the slope of the regression line (Fig. 4.5) shows a weak association between these two variables. Although the relationship is positive, the strength of the association as indicated by the linear correlation coefficient is somewhat weak (+0.336 which is significant at the 0.005 level of probability.)



REGRESSION LINE FOR ACTUAL DISTANCE TO THE NEAREST RAILWAY STATION (ATHABASKA  
LANDING OR COLINTON) AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-FIVE QUARTER-SECTIONS

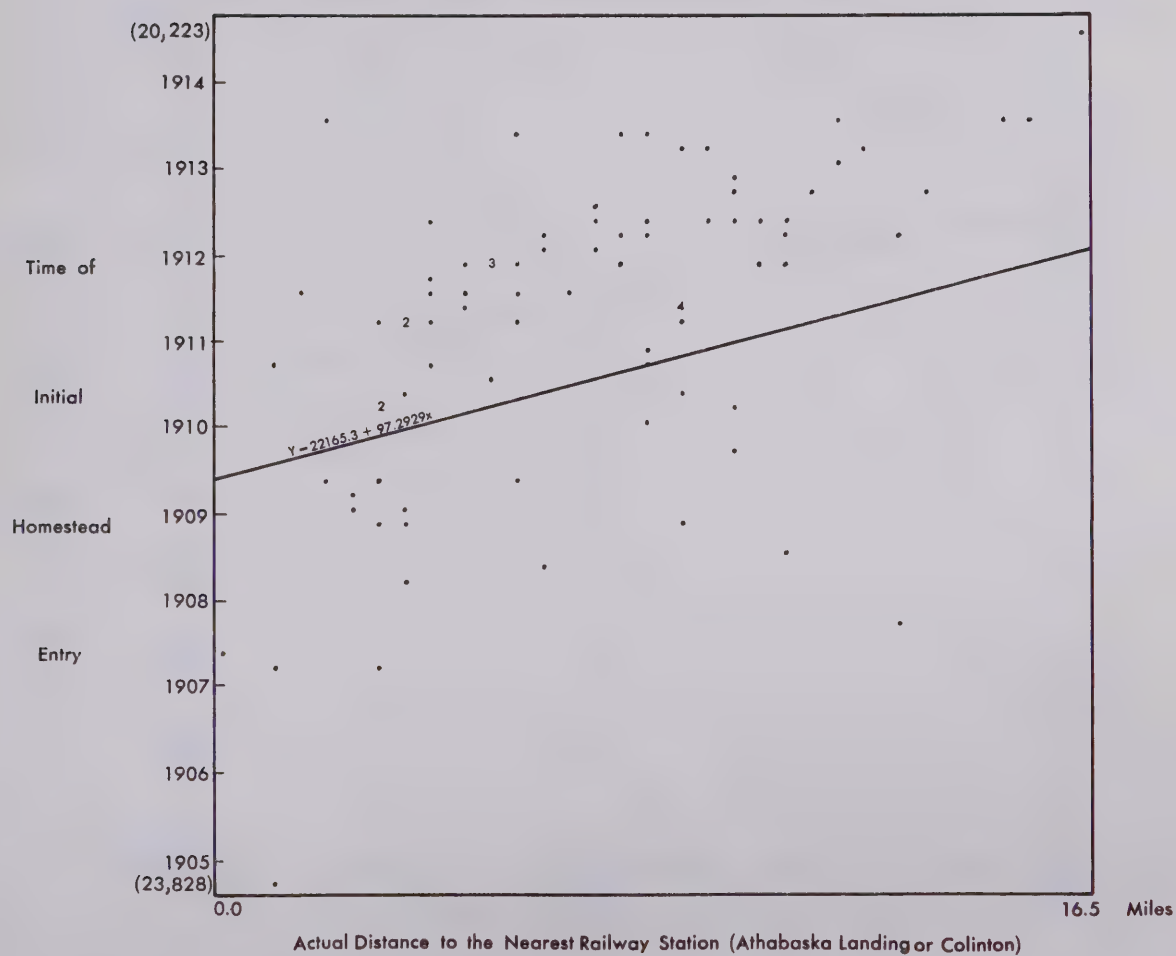


Fig. 4.4



**REGRESSION LINE FOR STRAIGHT LINE DISTANCE TO THE SOUTHERN BOUNDARY  
OF THE STUDY AREA AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-FIVE QUARTER-SECTIONS**

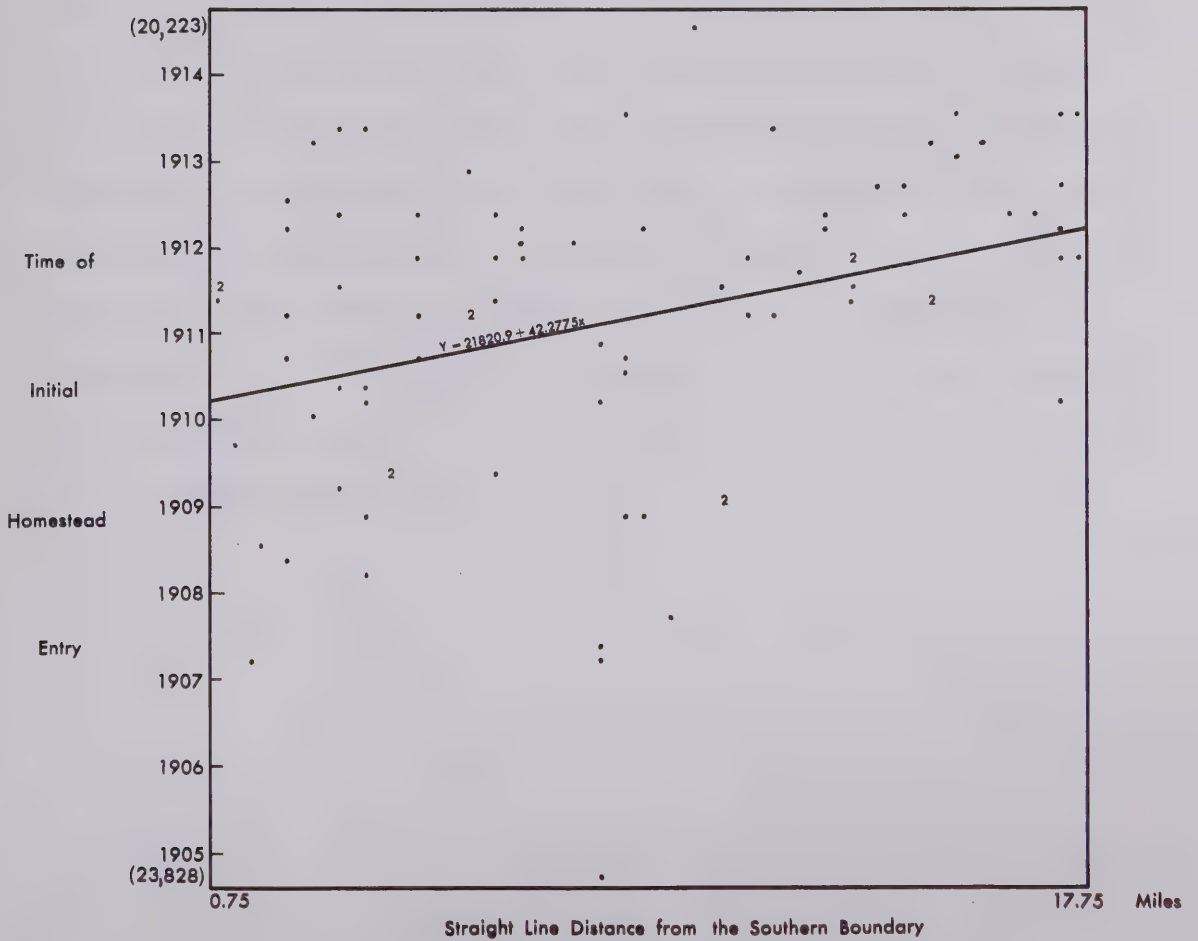


Fig. 4.5



## Conclusions

The attempts made above to show the relationship between time of initial homestead entry and distance from selected cultural imprints, failed to reveal any high degree of association. Distance to the railway depots and the nearest wagon road or trail were the two cultural realities that indicated any significant degree of association, with time of initial homestead entry. The variation in the topography, the density of vegetation cover and the quality of the soil undoubtedly influenced any orderly pattern of outward movement of rural settlement from the cultural realities. Recognition of the physical quality of the land was perhaps more crucial in terms of the process of rural settlement in the Athabasca study area.



## CHAPTER V

### RELATIONSHIP BETWEEN TIME OF INITIAL HOMESTEAD ENTRY AND SELECTED ENVIRONMENTAL VARIABLES

#### Introduction

Out of a complex array of elements within the physical environment that could be chosen as variables which may have influenced the process of rural settlement, two dominant environmental factors were selected: soil type and vegetative cover. These two variables will be related with time of initial homestead entry. Soil type and vegetative data were not available for all of the eighty-five quarter-sections filed on for the first time during the initial settlement period (1904-1915). Notation has been made of the number of quarter-sections that have been used in the statistical analyses.

#### Methods of Analysis

On the basis of the detailed vegetative descriptions contained in the original Dominion Land Surveyors' Notebooks four basic types of vegetative cover were classified:

- (1) Scrub cover - any broadleaf or needleleaf cover that was three inches or less in diameter at breast height or less than ten feet in height. This category also included the dry semi-open grassland areas that were interspersed between the scrub cover. These grass-



land areas tended to be small and were usually found along the minor creeks and on the river terraces.

- (2) Brulé - any needleleaf or broadleaf cover that had been recently burned over. May have had some scrub-cover regeneration. Also included windfall (i.e. trees that have been felled by strong winds).
- (3) Woodland - stands of needleleaf and broadleaf species that measured more than three inches in diameter at breast height and were greater than ten feet in height.
- (4) Swamp - both wet and dry swamp or muskeg areas that exhibited substantial accumulations of peaty material (usually more than ten inches in depth). Spruce and tamarac cover were usually present in the drier sites.

A linear correlation analysis was applied between the number of acres of each vegetative type (for 83 of the sampled 85 quarter-sections) and the initial time of homestead entry. Vegetative information for two parcels of land lying within the Hudson's Bay Company Reserve was not available.

One of the five major soil groups, chernozems, luvisols, brunisols, gleysols or organic soils, was assigned to each of the seventy-six of the eighty-five quarter-sections entered upon before 1915. Areal soil data for nine of the quarter-sections were not available; two were within the Town of Athabasca and the remaining seven were sited on the rough and broken slopes of the Athabasca and Tawatinaw River valleys. The assignment of a major soil grouping to the seventy-six quarter-sections was determined by the soil group that covered more than fifty per cent of the quarter-section in question, and at the same time represented the larger percentage combination of any major soil group within the areal boundaries outlined on the preliminary soils survey map. (Tawatinaw Sheet 83-I).



The five soil groups or types were ranked in the following order: (1) chernozems; (2) luvisols; (3) brunisols; (4) gleysols; (5) organic, and then correlated with time of initial homestead entry on a rank-order basis. The ranking of the five soil types was not totally arbitrary. Chernozems are the most productive soil group in the study area. A rich, but shallow Ah horizon is a superior soil to the typical luvisol which shows signs of eluviation of humic colloids and bases from the upper A horizon. The luvisols on the other hand, are superior to the brunisols. Although both soil types possess an Ae horizon of approximately the same depth, the brunisols are composed of loamy sand which tends to be excessively arid, in contrast to the clayey texture of the luvisols which tends to inhibit rapid infiltration and is therefore more desirable for small grain and grass production. The gleysols and organic soils are the least desirable for grain production because of their poor drainage conditions. The silty clay loam texture of the gleysols is more desirable than the thick accumulations of semi-decomposed and decomposed vegetative matter (i.e. peat) of the organic soils.

The initial homestead entry date data have been treated differently from the way they were handled in the previous chapter. Homestead entry dates were arranged on a one to seventy-six basis (ordinal measurement), in order to provide a ranking, that could be correlated with the ranked five soil type ratings. The ranking of these two sets of ordinal data



facilitated the use of a rank-order correlation technique. The degree of association between these two sets of ordinal data has been expressed as a Spearman correlation coefficient ( $r_s$ ). A student 't' test has been utilized to determine whether the ' $r_s$ ' is significant or not.

In addition to performing a rank-order correlation on the time of initial homestead entry and soil type data, the method has also been applied to another set of variables, "land fit for cultivation" ratings.<sup>14</sup> Each quarter-section was evaluated and assigned a land quality rating by the Dominion Land Surveyors at the time the area was platted. This investigation attempts to show whether there was any association between the Surveyor's evaluation of the land and the homesteaders' preferences.

Relationship Between "Land Fit for Cultivation" Ratings  
and Time of Initial Homestead Entry

Prior to illustrating the relationship between soil types and vegetative cover with date of first homestead entry the association between "land fit for cultivation" and time of homestead entry is interesting. Computation of the Spear-

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<sup>14</sup>  
1. Excellent  
2. Good  
3. Fair  
4. Poor



man's coefficient of rank-order correlation between the two sets of ordinal data, revealed a very weak, but positive relationship, (+0.166 which was significant at the 0.066 probability level). The arrangement of the entry dates (on an interval basis) within each land quality grouping is shown in Fig. 5.1. This distribution indicates that "poor" land was entered upon in advance of "fair" and "good" quality land.

These results should not be interpreted at great length, because the evaluation given by the Dominion Land Surveyor's may be open to question, and may well be variable between one Surveyor and another. Unfortunately any detailed classification that may have been used as a guide to their evaluations could not be traced.

#### Soil Type and Homestead Entry Date Analyses

The rank-order correlation analysis between the ranked soil types and the first, to the seventy-six homestead entrants revealed a Spearman correlation coefficient of +0.397 which was significant at the 0.001 probability level. Again the correlation coefficient value is not high. However, it is much larger than that obtained when the "land fit for cultivation" ratings were correlated with the time of homestead entry. Perhaps the use of selected data (seventy-six parcels of land as opposed to eighty-five in the former correlation analysis) may have accounted for the difference in the correlation coefficients. Fig. 5.2 shows the distribution of time of homestead entry for the seventy-six parcels of land within each



**RELATIONSHIP BETWEEN TIME OF INITIAL HOMESTEAD ENTRY  
AND THE 'LAND FIT FOR CULTIVATION' RATINGS**

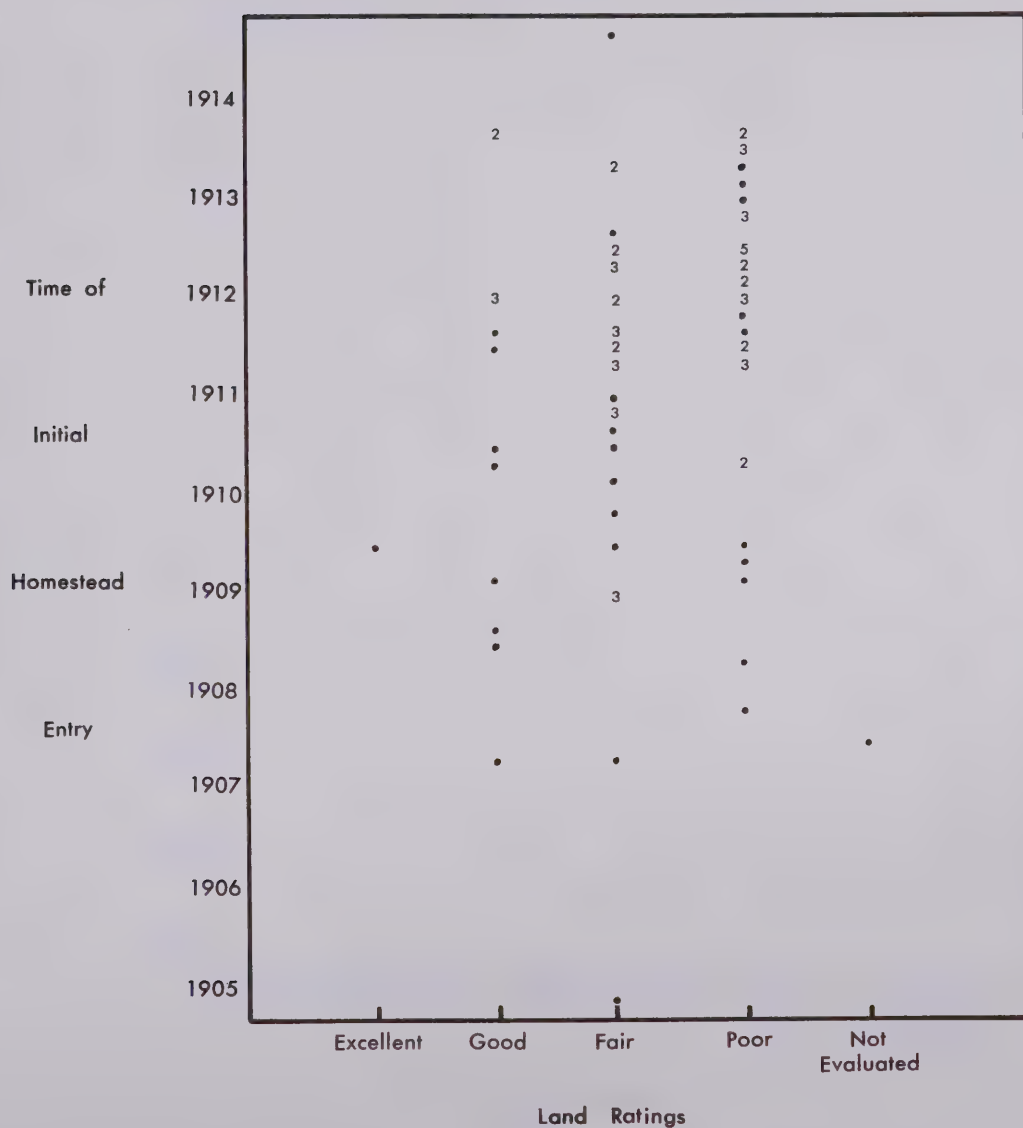


Fig. 5.1



# RELATIONSHIP BETWEEN TIME OF INITIAL HOMESTEAD ENTRY AND THE GREAT SOIL ORDERS

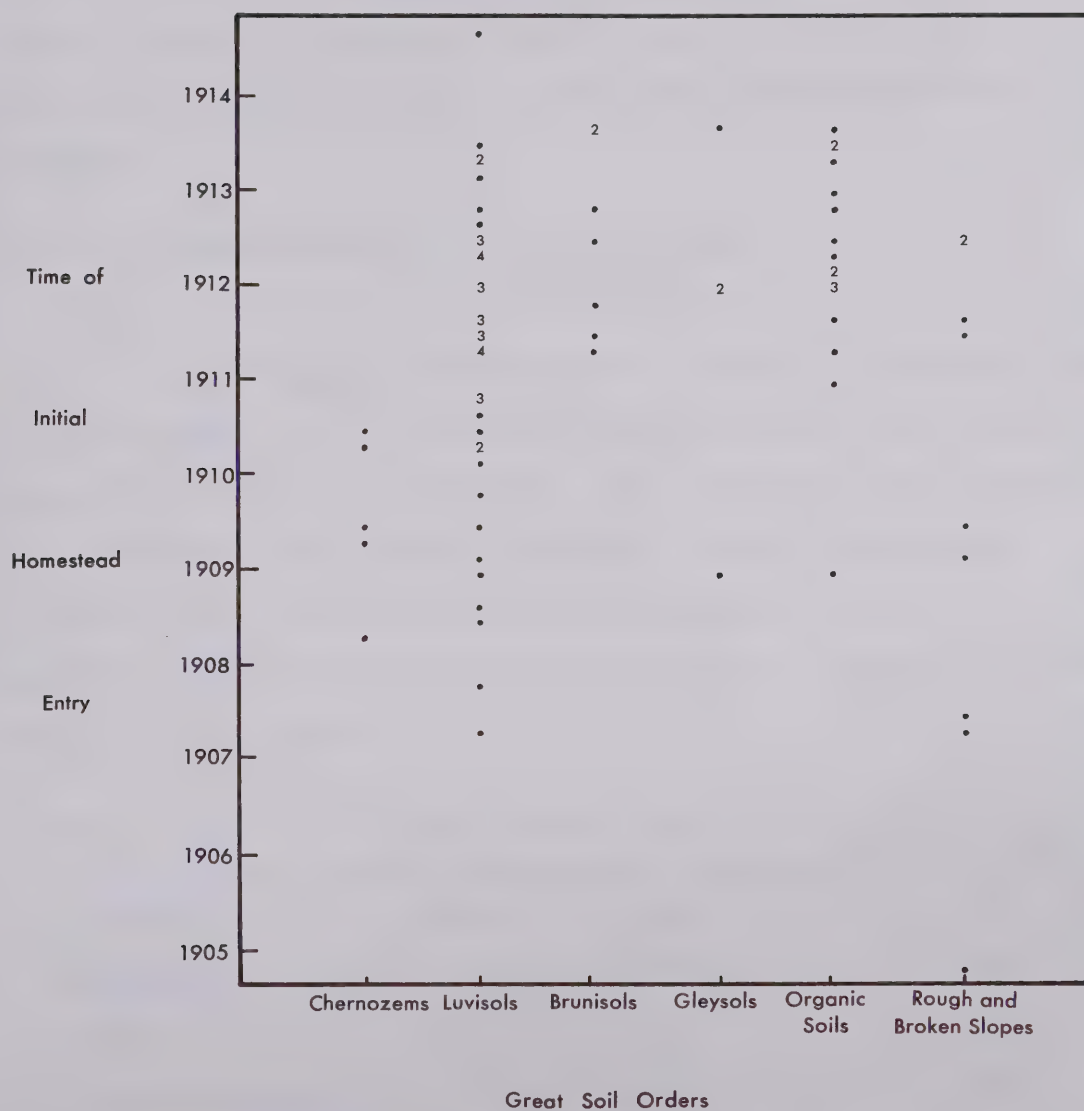


Fig. 5.2



major soil group. Once again, the poorer quality lands (i.e. those exhibiting organic soils development) were entered upon before or at the same time as luvisolic soils were claimed. In addition to this, in some instances, the rough and broken slopes tended to be claimed before any of the other soil types. Figure 5.2 clearly suggests that considerations other than soil type must have influenced the initial settlement process.

The Association of Date of Initial Homestead Entry with  
Vegetative Cover

In an attempt to determine the degree of affinity that one particular type of vegetative cover may have had over another, the number of acres within each group (4) was linearly correlated with the time of homestead entry. The Pearson Product-Moment correlation coefficient derived for each vegetative type when associated with time of initial homestead entry is shown below:

Type of Vegetative Cover		Linear Correlation	Level of Significance
Scrubland	(acres)	-0.493	.001
Woodland		+0.294	.003
Swamp		+0.223	.021
Brulé & Windfall		+0.144	.098

An examination of the scattergrams (Figures 5.3, 5.4, 5.5 and 5.6) will reveal why the positive and negative associations appear in the correlation coefficients. The larger



REGRESSION LINE FOR NUMBER OF ACRES OF SCRUBLAND  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-THREE QUARTER-SECTIONS

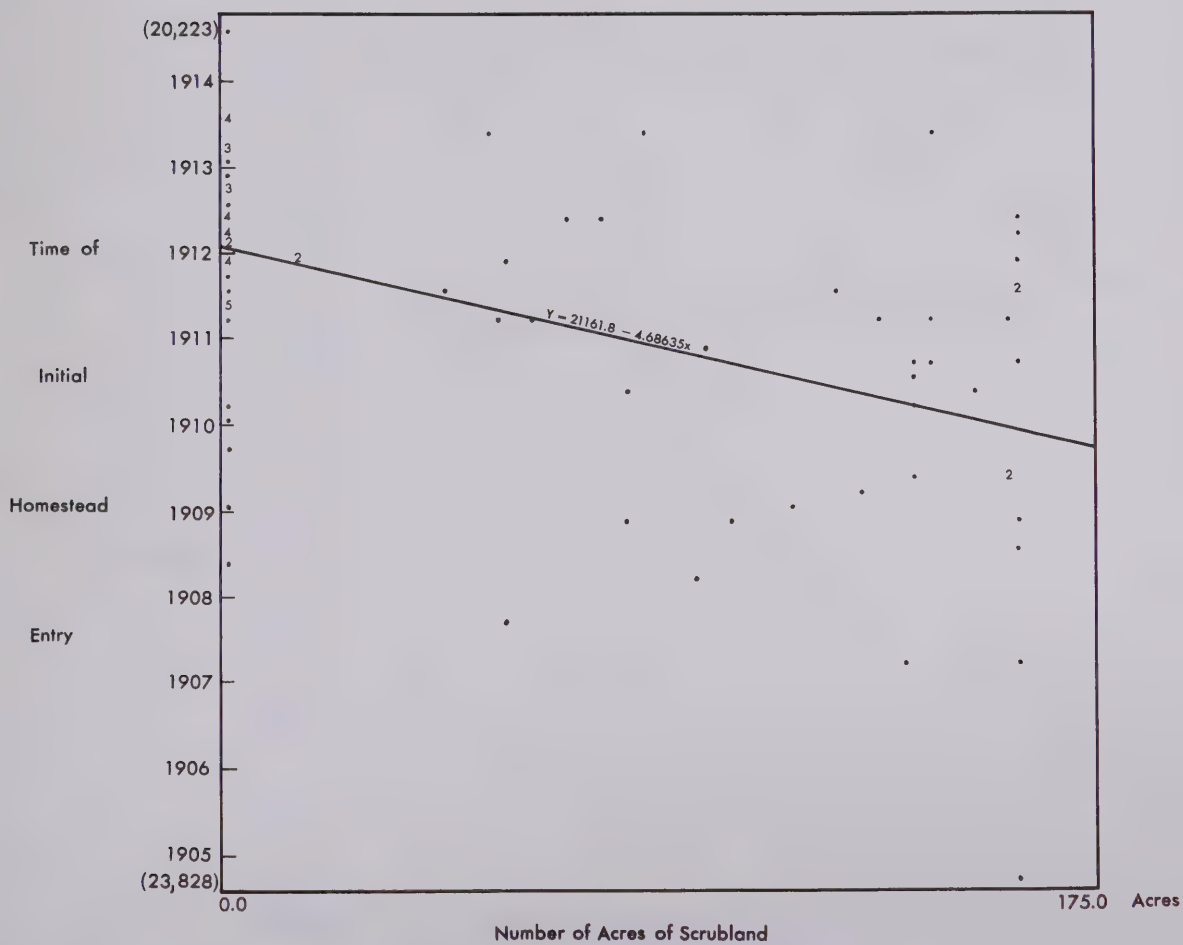


Fig. 5.3



REGRESSION LINE FOR NUMBER OF ACRES OF BRULÉ  
 AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
 ONTO EIGHTY-THREE QUARTER -SECTIONS

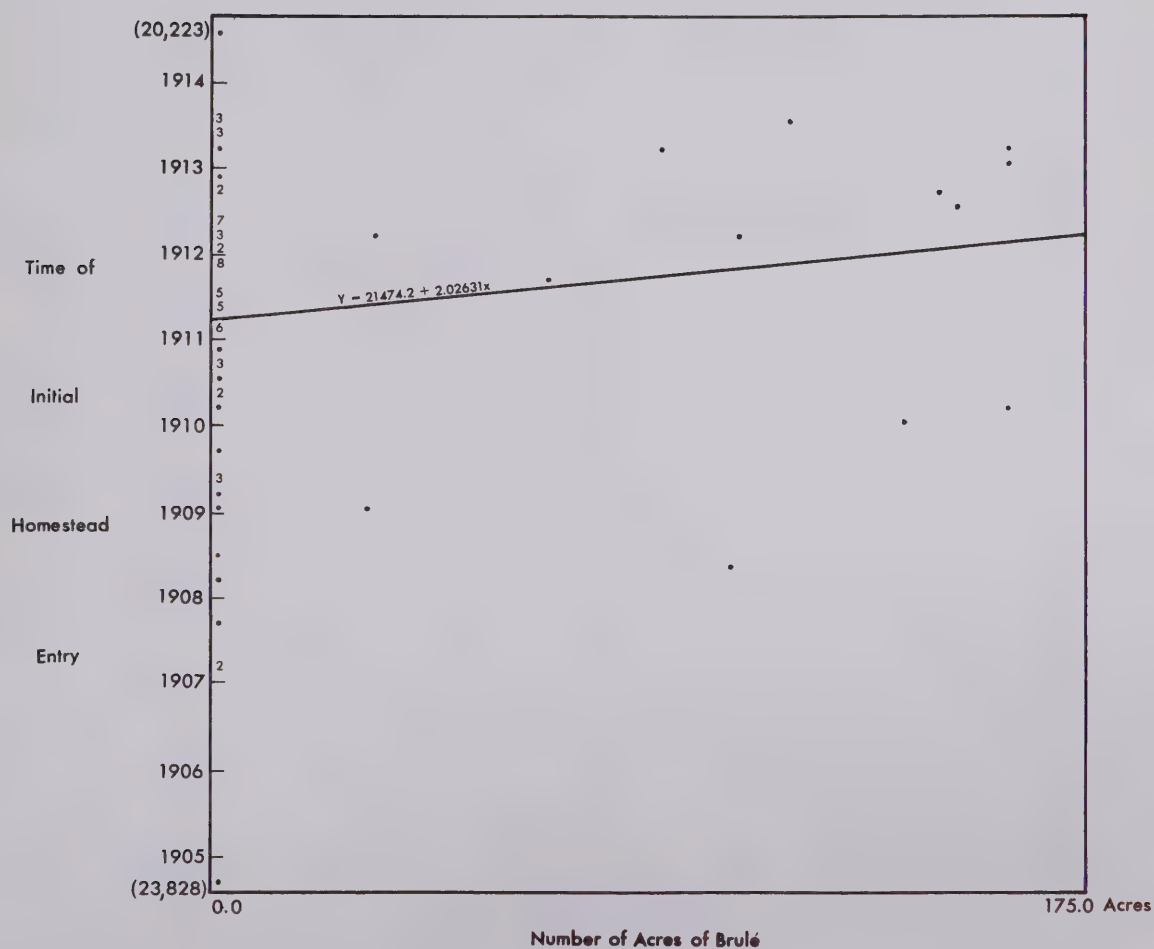


Fig. 5.4



REGRESSION LINE FOR NUMBER OF ACRES OF WOODLAND  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY- THREE QUARTER-SECTIONS

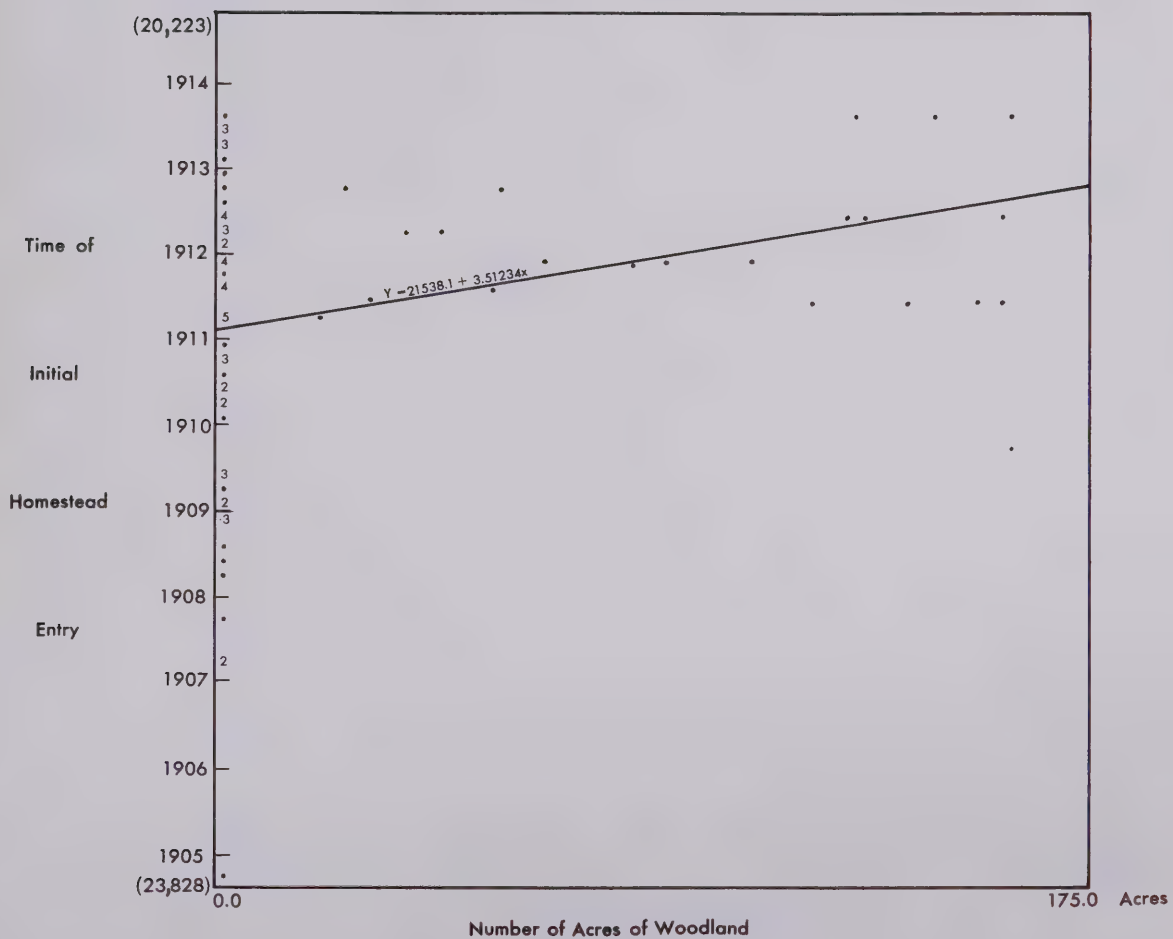


Fig. 5.5



REGRESSION LINE FOR NUMBER OF ACRES OF SWAMPLAND  
AGAINST THE TIME OF INITIAL HOMESTEAD ENTRY  
ONTO EIGHTY-THREE QUARTER -SECTIONS

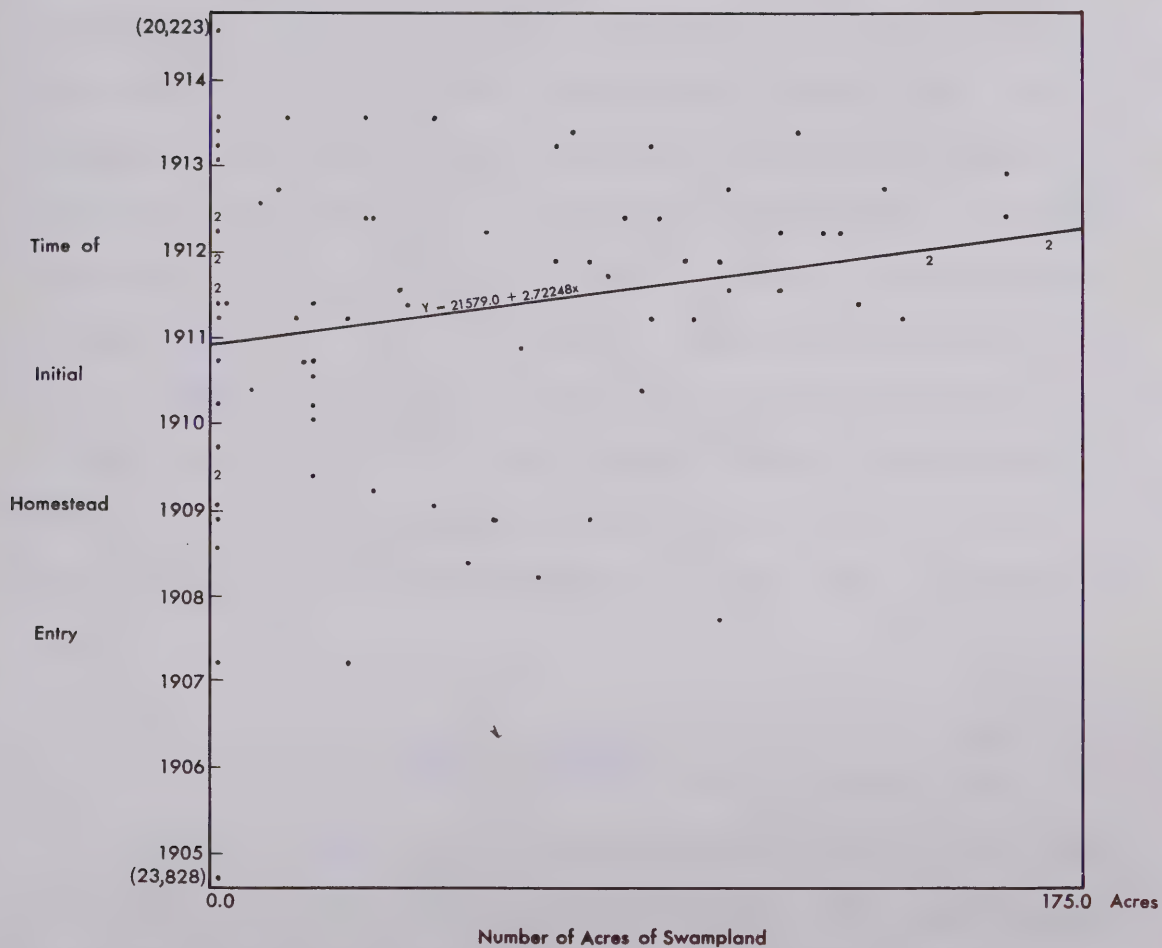


Fig. 5.6



the acreage of scrub cover (Fig. 5.3), the earlier the land tended to be settled; therefore, although the correlation coefficient reads as a negative value, in essence, the lands exhibiting a greater acreage of scrub cover tended to be settled earlier than that exhibiting other forms of cover. Woodland ranked as the most undesirable during the initial settlement period, followed by swamp, then brûlé and windfall. This attraction to the scrubland was not particularly strong. However, this type of vegetative cover was strongly associated with the undesirable flutes, which may account for the rather weak association. As noted in the distance to the Athabaska Landing Trail and time of homestead entry correlations, there was a strong indication that those parcels of land lying within the flute fields were not settled first. Nonetheless, there was a definite priority among the initial homestead entrants to choose scrubland over any other form of vegetative cover.

#### Patent Dates and their Association with the Environmental Variables

Of the eighty-five homestead entries made in the study area prior to 1915, some forty-six (54 per cent) were patented by 1920. Only eight quarter-sections filed upon during the initial settlement period were re-entered upon a second time. The patent dates (expressed as number of days ago) have been correlated with some of the distance and all of the environmental variables in an attempt to determine how



the resultant correlation coefficients vary with those derived when the homestead entry dates were used as the dependent variable. This approach will indicate what type of land was patented first and whether land close to certain cultural features tended to be patented earlier than that at some distance. The patent date's relationship with the distance and land quality variables has been restricted to the period up to 1920. Therefore the potential number of parcels of land under consideration is limited to forty-six. If soil and/or vegetative cover data are missing for any of the forty-six, notation has been made of the restricted sample size.

#### Relationship Between Land Patented before 1920 and Selected Distance Variables

Only one set of distance data requires use in the following analysis in order to compare the distance-time homestead entry with the distance-time of patent correlation coefficients. The theoretical or straight line distance measurements have been selected for this analysis. Computation of a linear correlation coefficient for each pair of distance variables as they vary with patent date and homestead entry date are shown below:



	Distance to Athabasca	Distance to Ath. Trail	Distance to Rail	Distance to S'ern Bound.
Entry Dates prior to 1915 N = 85	+0.294 (0.005)	+0.251 (0.010)	+0.454 (0.005)	+0.336 (0.005)
Patent Dates prior to 1920 N = 46	+0.299 (0.022)	+0.326 (0.014)	+0.473 (0.001)	+0.389 (0.004)

There is virtually no difference in the correlation coefficients for the paired entry date data and the patent date data with the various distance measurements.

#### Soil Type and Patent Date Relationships

A comparison of the "land fit for cultivation" correlation coefficients, is not feasible, because the significance level of the Spearman  $r_s$  when the patent date data were used was too high (0.398). However, on the basis of soil type rankings (i.e. (1) chernozem; (2) luvisol, etc.), the level of probability is sufficient to warrant comparison. The following table indicates very little variation between the two coefficients:

		Spearman $r_s$	Level of Significance
Entry dates prior to 1915	N = 85	+0.397	Sig. .001
Patent dates prior to 1920	N = 40	+0.357	Sig. .012

#### Relationship Between Patent Days and Vegetative Cover

A comparison of the linear correlation coefficients



derived when patent dates were plotted against number of acres of scrub cover, woodland, brulé (and windfall) and swamp for forty-four parcels of land, (two parcels within the Hudson's Bay Company Reserve lacked vegetative data), shows very little difference from those derived when entry dates were used as the dependent variable.

	Ac. of Scrub	Ac. of Wood	Ac. of Brulé	Ac. of Swamp
Entry Dates				
prior to 1915 N=85	-0.493	+0.294	+0.144	+0.223
Level of significance	(0.001)	(0.003)	(0.098)	(0.021)
Patent Dates				
prior to 1920 N=44	-0.493	+0.343	+0.087	+0.159
Level of significance	(0.001)	(0.011)	(0.287)	(0.152)

Scrubland tended to be patented sooner than either of the other three vegetative categories. The completion of homestead improvement duties was easier to perform on the scrub covered land than on land that was predominately wooded or poorly drained. Thirty acres of scrub cover that was interspersed with small patches of open grassland was far easier to clear and break than the wooded or brulé areas. It is difficult to infer any direct comparison between the brulé and swamp areas with regard to the variation in the linear correlation coefficients because of the low levels of significance when the acreage of these two types of vegetative cover were correlated with patent dates. The wooded areas, were



not only entered upon much later than the swamps or brulé areas, but they took a much longer period of time to patent.

### Conclusions

The type of vegetative cover appeared to have exerted the strongest influence on the homesteader's initial locational decisions. A preference for scrub cover over any other type of vegetation cover was illustrated by the correlation analysis. There appeared to be relatively little distinction made on the homesteader's part to differentiate degraded black soils from luvisols. However there was somewhat of a preference for these types as opposed to the brunisols, gleysols and organic soils.

Any grouping of certain members of the soil variables with those of the vegetation variable might have been meaningful. However, the reduced sample population would be such that any associations (expressed as correlation coefficients) would have become uninterpretable, because of the large element of "chance" associations. Secondly, although the use of dominant soil groups was, perhaps, a general approach, it appeared to be the best method of examining this variable. Unfortunately, these data could not be measured exactly on an areal basis.



## CHAPTER VI

### THE RELATIONSHIP BETWEEN ETHNIC BACKGROUND AND SELECTED VARIABLES

#### Introduction

The analysis of the rural settlement process in the Ahtabasca study area has focused upon the relationship between time of initial homestead entry and time of patent date (prior to 1920) with a few selected spatial (distance) and environmental variables (vegetative cover and soil type). This chapter concentrates on the ethnic<sup>15</sup> background of the early homesteaders and stresses the interrelationships between ethnicity and time of homestead entry, time of first homestead patent and predominant vegetative cover. Homestead abandonment and cancellation rates will be examined in

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<sup>15</sup>"Ethnic" in this study refers to the place of birth of the homestead entrant (male or female), as recorded on the "Application for Homestead Entry" form. Four major ethnic categories have been selected for the following analyses:

- (1) Americans (born in U.S.A)
- (2) Canadians (born in Canada)
- (3) British (born in the United Kingdom)
- (4) European (born in Eastern or Western Europe, includes France, Germany, Hungary, Poland, Austria, Norway, Sweden, Russia and the Ukraine.



light of the association with the predominant type of vegetative cover for the quarter-sections under examination and then collated with the ethnic background of the homestead entrant. Many initial and subsequent homestead entries were either voluntarily abandoned by the homestead entrant or were cancelled by the Department of the Interior if the homestead entrant failed to adhere to the homestead regulations regarding residency, cultivation and improvement duties. (Appendix II). Homestead entries were also cancelled by the Department of Interior if the homestead entrant failed to produce Canadian citizenship to the homestead authorities. The British were the only ethnic group exempt from declaring Canadian citizenship.

In the following discussion, the term "abandonment" will be used in the broad sense of the homesteaders declared (abandonment) or undeclared (cancellation) exit from a homestead (one quarter-section).

#### Method of Analysis

In an attempt to show the inter-relationships between a dependent variable (ethnicity) and two independent variables (date of initial homestead entry and type of vegetative cover) utilization of such advanced statistical techniques as chi-square or multifactor analysis were not possible because of the limited number of members within each ethnic group. When these three variables were interrelated in tabular form a number of "cells" within the tables remained empty.



The interrelationship between these variables is best illustrated by showing absolute and percentage frequencies in table form based on each ethnic group.

As one of the more influential factors in the overall rural settlement process, the type of vegetative cover has been selected as the environmental index for the inter-related analysis.

### The Homesteaders' Ethnic Background

The Americans comprised proportionately the largest ethnic group to enter the Athabaska Landing area during the initial settlement period (1904-1915). Their numbers were followed by the Canadian-born, then the British and European-born, respectively. Table 6.1 shows the absolute frequency and percentage breakdown for each ethnic group based on the findings of the random sample. The birthplace for twelve of

TABLE 6.1

#### INITIAL HOMESTEADERS' ETHNIC BACKGROUND (1904-1915)

Place of Birth	Absolute Frequency (N)	Percentage Frequency
United States of America	29	39.4%
Canada	18	24.8%
United Kingdom	14	19.2%
Europe	<u>12</u>	<u>16.6%</u>
TOTAL	73	100.0%



the eighty-five first homestead entrants were unobtainable. The homestead entry forms had become lost, were not properly filled out at the time of initial entry, or were indecipherable.

If consideration is given to all those homesteaders who filed onto land in the Athabasca study area between 1904-1915 either as first, second, third, etc., homestead entrants, the proportionate change in ethnic composition is very slight. (Table 6.2).

TABLE 6.2

ETHNIC BACKGROUND OF ALL HOMESTEAD ENTRANTS  
(1904-1915)

Place of Birth	Absolute Frequency	Percentage Frequency
United States of America	39	36.4%
Canada	29	27.1%
United Kingdom	23	21.5%
Europe	15	14.0%
West Indies	<u>1</u>	<u>1.0%</u>
TOTAL	107	100.0%

The large influx of Americans into Canada prior to World War I had followed the closing of the American frontier. The high price of land in the established agricultural areas in the United States had encouraged young men to press north-



ward to the last large agricultural frontier on the continent. They had become aware that a parcel of land (160 acres) could be entered upon for a meagre \$10 entry fee in Canada's Western Interior.

Although the Americans comprised the largest ethnic group to enter the study area during the initial settlement period, they tended to enter somewhat later than the British and Canadian homesteaders. If the initial homestead entry data are reviewed, by 1911, forty per cent of the Canadians and forty-six per cent of the Britishers who were to eventually claim land for the first time had already done so. This figure compares with only fourteen per cent for the Americans and nine per cent for the Europeans. This difference in the time of entry, naturally affected the type of land available for further settlement. If the predominant vegetative cover is used as an index of land quality, the distribution of American, Canadian, British and European entries is somewhat varied, (Tables 6.3, 6.4, 6.5, 6.6).

Until 1911, the Canadian, British and European entrants had favored the scrub and brulé dominated quarter-sections, whereas two of the three American entrants had favored the predominantly swampy land. After 1911, the availability of good scrubland had diminished, and brulé, wooded and swampy areas were claimed. The four American claims onto scrubland in 1912 and 1913, were situated in the flute fields to the south of Athabaska Landing.

Perhaps the most interesting ethnic preferential pat-



TABLE 6.3

FREQUENCY DISTRIBUTION OF INITIAL AMERICAN HOMESTEAD ENTRANTS ON AN INITIAL HOMESTEAD  
ENTRY DATE--TYPE OF VEGETATIVE COVER BASIS

Dominant Type of Vegetative Cover	1907	1908	1909	1910	1911	1912	1913	1914
Scrub	1				1	2 (1) *	2 (2)	
Brulé						1	2 (1)	
Woodland					2	1 (1)	2 (2)	
Swamp	1			1	5 (5)	8 (5)		
Total Entries--29						Total Abandonments--17		

TABLE 6.4

FREQUENCY DISTRIBUTION OF INITIAL CANADIAN HOMESTEAD ENTRANTS ON AN INITIAL HOMESTEAD  
ENTRY DATE--TYPE OF VEGETATIVE COVER BASIS

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Scrub	1				1 (1)	1	2 (1)	1			
Brulé						1					
Woodland								3 (1)	1 (1)	1 (1)	
Swamp								4 (2)			
Total Entries--16								Total Abandonments--7			

\*The number in parentheses indicates the number of entries within each cell that were cancelled or abandoned shortly after entry. The remaining parcels of land were eventually patented by the first homestead entrant.

NOTE: Vegetation cover unknown for one of the Canadian entries.



TABLE 6.5

FREQUENCY DISTRIBUTION OF INITIAL BRITISH HOMESTEAD ENTRANTS ON AN INITIAL HOMESTEAD  
ENTRY DATE--TYPE OF VEGETATIVE COVER BASIS

Dominant Type of Vegetative Cover	Year of Initial Homestead Entry						
	1907	1908	1909	1910	1911	1912	1913 1914
Scrub		2(1)		3(1)	1		1
Brulé			1				
Woodland				3(1)	1(1)		
Swamp				1			1
Total Entries--14				Total Abandonments--4			

TABLE 6.6

FREQUENCY DISTRIBUTION OF INITIAL EUROPEAN HOMESTEAD ENTRANTS ON AN INITIAL HOMESTEAD  
ENTRY DATE--TYPE OF VEGETATIVE COVER BASIS

Dominant Type of Vegetative Cover	Year of Initial Homestead Entry						
	1907	1908	1909	1910	1911	1912	1913 1914
Scrub					3(2)		
Brulé	1					1(1)	2(1)
Woodland							1(1)
Swamp						3(2)	1(1)
Total Entries--12				Total Abandonments--8			

\*The number in parentheses indicates the number of entries within each cell that were cancelled or abandoned shortly after entry. The remaining parcels of land were eventually patented by the first homestead entrant.



tern relates specifically to the American claims made in 1911 and 1912. There was a marked preference for swampland by this ethnic group during this time period. This preference is in direct contrast to the British preference for woodland. The Canadians claimed each type of land (woodland vs swamp-land) in equal proportions during these two years. By 1913 the American entrants were claiming scrub, brulé and woodland in equal proportions.

Proportionately, the homestead abandonment rates after the land had been filed upon once were relatively high (Table 6.7).

TABLE 6.7  
RATE OF INITIAL HOMESTEAD ABANDONMENT  
BY ETHNIC GROUP, 1904-1915

Ethnic Group	Total Number of Initial Entries	Absolute Frequency of Abandonment of Initial Entries	Percentage of Abandonment of Initial Entries
Americans	29	17	60%
Canadians	17	7	41%
British	14	4	29%
Europeans	<u>12</u>	<u>8</u>	<u>67%</u>
TOTAL	72	36	50%

The rate of abandonment (including cancellation) corresponded closely with the time of entry; that is, the Americans and Europeans tended to abandon the initially entered



quarter-section shortly after filing had been completed. The length of time it took each ethnic group to abandon each type of quarter-section (based on vegetative cover) is indicated in Table 6.8 below.

TABLE 6.8

AVERAGE LENGTH OF TIME (IN YEARS) FOR EACH ETHNIC GROUP TO  
ABANDON INITIAL HOMESTEAD, BASED ON VEGETATIVE COVER,  
1904-1915

Dominant (Over 50%) Type of Vegetative Cover	Average Length of Time (in Years) for each Ethnic Group				Average Length of Time (Yrs.) for Domin- ant Type of Vegetative Growth
	Americans	Canadians	British	Europeans	
Scrub	1.88 (N=3) *	0.94 (N=2)	0.93 (N=1)	1.02 (N=2)	1.19
Brulé	0.27 (N=1)			4.09 (N=2)	2.18
Wood	2.43 (N=3)	1.23 (N=3)	1.69 (N=2)	0.84 (N=1)	1.54
Swamp	3.49 (N=7)	1.28 (N=2)		1.21 (N=2)	1.99
Average length of time for each ethnic group	1.76 (N=14)	1.15 (N=7)	1.31 (N=3)	1.79 (N=7)	

\* The N values appeared in parenthesis in Tables 6.3-6.6 and refer to the absolute frequency of abandonment.

Of the fourteen known American abandonment dates, four were given-up within one year's time and another five within a period of two years. On the average, the Americans tended to remain for a longer period of time on the predominantly swampy parcels of land. Compared with the Canadians and the



Europeans who abandoned swampland after first entry, the Americans, on the average, stayed two years longer.

All four ethnic groups readily abandoned the scrub-covered parcels of land lying within the flute fields or along the rough and broken flanks of the Tawatinaw River valley.

If an examination of the second, third and fourth homestead entrants onto parcels of land initially homesteaded for the first time between 1904-1915 is made, the rate of abandonment of these subsequent entries far exceeded the rate of abandonment of the first homestead entrants for three (Americans, Canadians, Britishers) of the four ethnic groups. (Table 6.9).

TABLE 6.9

RATE OF HOMESTEAD ABANDONMENT BY THE SECOND, THIRD AND FOURTH  
HOMESTEAD ENTRANTS, BY ETHNIC GROUP, 1904-1915

Ethnic Group	Total Entries	Number Abandoned	Percentage Abandoned
Americans	11	9	81.8%
Canadians	10	6	60.0%
British	8	5	62.5%
Europeans	3	2	66.6%

On a time of homestead entry-type of vegetative cover basis all ethnic groups tended to patent scrubland more readily than any other type of vegetative cover (Tables 6.10-6.13).



TABLE 6.10

FREQUENCY DISTRIBUTION OF SUBSEQUENT (SECOND, THIRD, FOURTH, ETC.) HOMESTEAD ENTRANTS, ON A TIME OF SUBSEQUENT HOMESTEAD ENTRY--TYPE OF VEGETATIVE COVER BASIS

Ethnic Group	Dominant Type of Vegetative Cover	Year of Homestead Entry by Second, Third, and Fourth Homestead Entrants						
		1909	1910	1911	1912	1913	1914	1915
Americans	Scrub		1			1 (1) *		
	Brulé					1 (1)		
	Woodland					1 (1)	2 (2)	
	Swamp			1		2 (2)	2 (2)	
Total Number of Entrants - 11		Number Abandoned - 9						

TABLE 6.11

Canadians	Scrub				4 (2)		1 (1)	
	Brulé	1						
	Woodland				3 (2)		1 (1)	
	Swamp							
Total Number of Entrants - 10		Number Abandoned - 6						

TABLE 6.12

British	Scrub	1	1 (1)	1		3 (2)		
	Brulé							
	Woodland					2 (2)		
	Swamp							
Total Number of Entrants - 8		Number Abandoned - 5						

TABLE 6.13

Europeans	Scrub		1					
	Brulé							
	Woodland							
	Swamp					1 (1)	1 (1)	
Total Number of Entrants - 3		Number Abandoned - 2						

\*Number in parentheses indicates number of entries abandoned within each cell.



Once again the scrubland that was abandoned during this time was located on the rough and broken slopes of the major river valleys or in the flute fields. Only two of the twelve parcels of land exhibiting predominately swamp cover were duly patented by subsequent homestead entrants (both by Americans). In addition to the homestead entries and abandonments shown in Tables 6.10-6.13, one West Indian (Jamaican) filed as a second homestead entrant onto swampland in 1913, but rapidly abandoned the quarter-section.

The following table summarizes the total number of homestead entries filed for the entire 1904-1915 period, in addition to the percentage of those entries that were eventually abandoned on an ethnic basis.

TABLE 6.14

## ALL HOMESTEAD ENTRIES FILED BETWEEN 1904-1915

Ethnic Group	Total Number of Entries	Number of Quarter-Sections Eventually Abandoned	Percentage of Entries Eventually Abandoned
Americans	40	26	65%
Canadians	27	13	48%
British	22	9	41%
Europeans	15	10	69%
West Indian	1	1	100%

The higher rate of abandonment amongst the American and Europeans related to the limited amount of good quality



land remaining when they entered the area. The British and Canadians tended to enter first and therefore claimed the scrubland which was easier to improve.

Reasons Stated for Abandonment by Ethnic Group for all  
Homestead Entries Made Between 1904 and 1915

On every abandonment and cancellation of homestead entry form, appeared a space for the homesteader to declare his reason for giving-up his claim. Often personal reasons such as illness, death or financial embarrassment were those cited for leaving. These reasons are shown in Table 6.15 for each ethnic group. Although the reliability of these reasons may be questionable, the poor quality of the land was the most frequent reason cited for abandonment. Sixty-four per cent of the Americans and sixty-three per cent of the Canadians claimed poor land as the major reason for their moves.

TABLE 6.15

REASONS GIVEN BY ETHNIC GROUPS FOR ABANDONING QUARTER-SECTIONS,  
1904-1915

Ethnic Group	Poor Land	Mis-Filed	Leaving Country	Financial Embarrassment	Illness	Death
Americans	9	1	1	1	1	1
Canadians	5	1	2	-	-	-
British	3	-	-	1	3	2
Europeans	-	1	-	-	1	1



### Frequency of Homestead Entries Prior to Patent

Many of the eighty-five quarter-sections in the random sample that were first homesteaded during the 1904-1915 settlement period had more than one homestead entrant before the individual parcels of land were patented. Table 6.16 shows the frequency of homestead entries completed before the parcel of land was patented; indeed some seven in the sample of eighty-five were never patented. Only fifty-four per cent of the first homestead entrants eventually patented the declared quarter-sections (Table 6.16). By 1920, 44.7 per cent of the eighty-five parcels of land first filed upon during the initial settlement period (1904-1915) had been patented. Of the forty-six quarter-sections that were entered upon before 1915 and patented by 1920, fifty per cent of the patents were issued on parcels of land that had predominant scrub cover. This ratio compares with 28.3 per cent for predominately swampland, 11.0 per cent for woodland and 8.7 per cent for brulé. The majority of the predominantly swampy and wooded quarter-sections that were patented before 1920, had a high ratio of scrub cover in association with the swampland.

These quarter-sections which were patented after 1930 were largely wooded and swampy parcels of land (Fig. 6.1). The ratio of swampland patented after 1930 is almost equal to the ratio of scrubland patented prior to 1920 and during the 1920's. The trends in land patenting are not surprising, as the scrubland was much easier to clear and cultivate than



PERCENTAGE OF QUARTER-SECTIONS PATENTED  
UNDER SELECTED TEMPORAL CONDITIONS  
BASED ON DOMINANT VEGETATIVE COVER

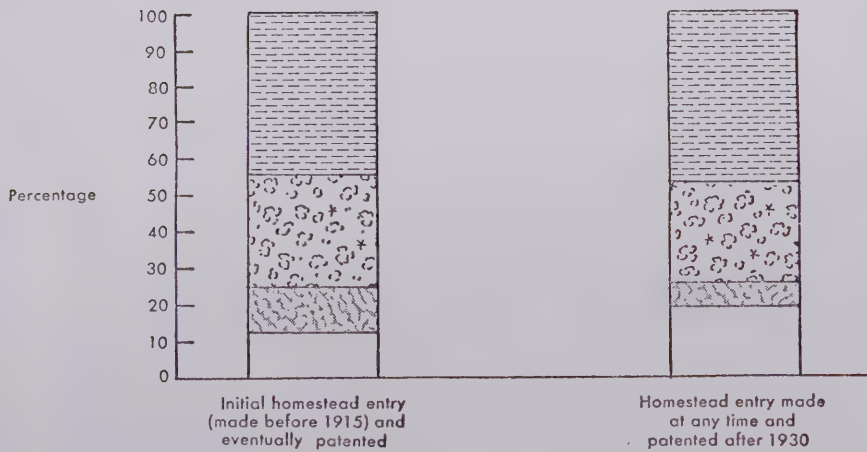
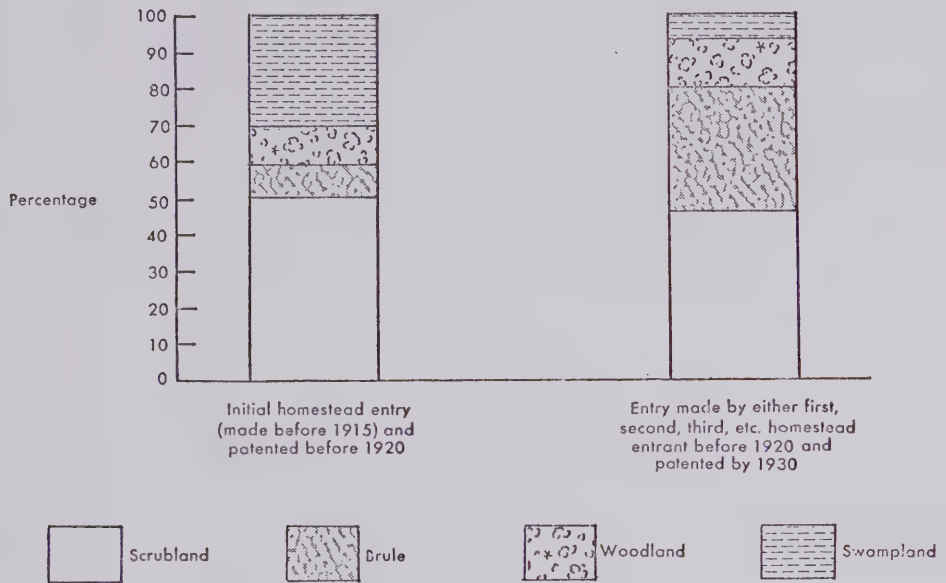


Fig. 6.1



TABLE 6.16

FREQUENCY OF HOMESTEAD ENTRIES BEFORE PATENTED FOR EIGHTY-FIVE QUARTER-SECTIONS  
INITIALLY HOMESTEADED BETWEEN 1904-1915

Number of Homestead Entrants	Up to 1915	1915-19	1920-29	1930-39	1940-49	1950-59	1960-69	Never Patented
1	21	17	6					2
2	2	5	2		1			4
3			4	2		1		2
4			2	2	3	1	1	
5			3		1			
6					1			
7								1



any of the other types of vegetative cover. The cultivation requirements as stated in the homestead regulations were readily performed on scrubland and patent was soon granted.

Association Between Ethnic Groups and Homestead  
Patent Dates

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If consideration is given to the ethnic groups that patented land prior to 1920, the Canadians patented a greater number of quarter-sections than any other ethnic group (Table 6.17).

TABLE 6.17

QUARTER-SECTIONS ENTERED ON BEFORE 1915 AND PATENTED BEFORE  
1920

	Absolute Frequencies	Percentage Frequencies
Americans	12	31.6%
Canadians	14	36.8%
Britishers	11	29.0%
Europeans	<u>1</u>	<u>2.6%</u>
TOTAL	38	100.0%

The variation between percentage of homestead entrants during the 1904-1915 settlement period by ethnic divisions, and the percentage patented by 1920 by ethnic breakdown, clarifies the trend examined previously. That is, the Americans tended to enter the area somewhat later than the Canadians and Britishers and therefore did not proportionately patent as much land. Once again this relates to the type of



land left to be claimed by the later entrants. The Europeans, like the Americans, had a lower rate of patenting than the other two groups.

The type of land patented by either the first or second homestead entrant before 1920 is shown in the following table based on ethnic groups.

TABLE 6.18

Dominant Type of Vegetative Cover	<u>ETHNIC GROUP</u>				
	American	Canadians	Britishers	European	Total
Scrub	2	6	7	1	15
Brulé	1	2	1	0	5
Woodland	2	3	0	0	5
Swamp	7	2	3	0	12
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	12	13*	11	1	37

Ethnic origin for eight entrants is unknown.

\*Vegetative cover unknown for one Canadian patent.

Once again the association between time of entry and type of land eventually patented by each ethnic group resembles the association discovered between time of initial homestead entry and type of vegetative cover preferred or left for each ethnic group (Tables 6.3, 6.4, 6.5, 6.6). The variation in the total number of parcels of land patented for each ethnic group is accounted for by the second entrant who patented



by 1920, and who may have been of a different ethnic origin than the first entrant, and secondly, there were the occasional quarter-sections that were not patented until after 1920, but were entered upon during the initial settlement period (1904-1915).

In general, all ethnic groups took a longer period of time to patent land that was predominately wooded or that had been burned-over (brulé). It is difficult to compare the differences in time of patent between each ethnic group because of the limited number of occurrences within each cell in Table 6.19.

TABLE 6.19

AVERAGE LENGTH OF TIME (IN YEARS) FOR EACH ETHNIC GROUP TO  
PATENT QUARTER-SECTIONS ENTERED UPON BEFORE  
1915 AND PATENTED BEFORE 1920

Dominant Type of Vegetative Cover	Ethnic Group			
	Americans	Canadians	Britishers	Europeans
Scrub	3.68 (N=2)	4.58 (N=6)	4.32 (N=7)	3.25 (N=1)
Brulé	5.16 (N=1)	7.89 (N=2)	8.27 (N=1)	-
Woodland	5.23 (N=2)	5.60 (N=3)	-	-
Swamp	4.78 (N=7)	1.77 (N=2)	4.07 (N=3)	-

The average length of time required to patent the forty-six quarter-sections entered upon and patented before 1920, was 4.73 years. On a vegetative breakdown, swampland took the



least time to patent, 4.38 years, followed by scrubland 4.47 years, brulé 4.66 years and woodland 6.21 years. The short period for patenting swampland, can be accounted for rather simply. Of the twelve quarter-sections patented before 1920, eight had over thirty-five per cent scrub cover and the remaining four had a wooded cover ranging from twelve to thirty-four per cent. Those parcels that had a combination woodland and swamp cover took an average of 4.92 (N=4) years to patent compared with the combination swamp-scrub cover which took an average of 4.13 years (N=8).

#### Post World War I Homestead Entry and Patent Patterns

During the 1920's there were many quarter-sections that were re-entered upon, in addition to new entries made onto parcels of land previously unclaimed. Of the thirty-six homestead entries made during the 1920's on twenty-three parcels of land, only thirteen were eventually patented. Table 6.20. below shows the frequency of homestead entry,

TABLE 6.20

NUMBER OF HOMESTEAD ENTRIES MADE DURING THE 1920's AND INCIDENCE OF EVENTUAL ABANDONMENT OF THESE ENTRIES BY  
ETHNIC GROUPS

Ethnic Groups	Number of Homestead Entries	Number of Abandonments	Percentage Abandonment
Americans	11	6	54.5%
Canadians	4	3	75.0%
British	9	8	88.8%
Europeans	9	5	44.4%
TOTAL	33	22	67.0%



the number of abandoned homesteads and the number of patented quarter-sections all based on ethnic background. The birth-place for three homestead entrants was unknown. The abandonment rate was excessively high for all entrants (based on ethnic data) at sixty-seven per cent. Proportionately, the British-born recorded the greatest number of homestead failures during the 1920's. The majority of the British-born entered the Athabasca area under the Soldier Settlement scheme which provided one-half sections of land to British farm workers, who wished to farm in Canada. In the Athabasca area, the war veterans agreed to purchase the half-section for a set price of \$5,200.00.<sup>16</sup> By the mid-1920's when these people began moving into the area, the better quality land had been homesteaded and patented or subsequently purchased by 'men of means' following completion of patent. This situation placed the British settler in an awkward financial position. Although the 1920's were generally a period of prosperity, the incoming British veteran found himself situated on poor quality land with heavy financial commitments. He was expected to pay interest and some principle on the land purchase loan, and in order to improve the land, basic machinery was required and purchase prices at that time were relatively high. Placed in this situation in the late

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<sup>16</sup>Pers. Comm. with Mr. B. C. Hart, an English settler who entered the area under the Soldier Settlement Scheme.



1920's, just prior to the depression era of the 1930's, many became discouraged and abandoned the land.

Although the 1930's marked a movement northward of "dried-out" farmers from southern Alberta and Saskatchewan, the few who entered the Athabasca area did not claim homesteads. The European-born, primarily from Poland, represented the greatest number of homesteaders. These people persevered with predominately swampy land or scrub covered flutes, and some eventually managed to gain patent after an average of eleven years.

TABLE 6.21

NUMBER OF HOMESTEAD ENTRIES MADE DURING THE 1930's AND  
INCIDENCE OF EVENTUAL ABANDONMENT OF THESE  
ENTRIES BY ETHNIC GROUPS

Ethnic Group	Number of Homestead Entrants	Number of Abandonments	Percentage Abandonments
American	4	4	100%
Canadians	5	4	80%
British	1	1	100%
European	9	5	56%
Total	19	14	75%



By the outset of the Second World War, homesteading activity in the study area had virtually drawn to a close. The occasional parcel of land has been purchased on a homestead lease system by resident farmers wishing to expand their holdings. Seldom has this trend been necessary, as farm consolidation since the Second World War has resulted in land change amongst the patented land.

### Conclusions

The Americans were proportionately the largest ethnic group to enter the study area during the initial settlement period (1904-1915). By the time the Americans and Europeans arrived in the Athabaska Landing district the better quality land (scrubland) had been largely claimed by Canadians and Britishers. The abandonment rates of initial homestead claims by the Americans and Europeans were higher than they were for the Canadians and Britishers; a fact largely reflecting the poorer quality land (primarily swampland) claimed by the later homestead entrants.

For those who initially entered about the same time, there were certain preferential trends between the ethnic groups. The Britishers' preference for woodland matched the American preference for swampland, particularly in 1911. The scrubland that was entered upon and abandoned shortly afterwards was inevitably associated with either the flute fields or the rough and broken ridges of the major river valleys.



The patent trends were largely a reflection of the initial homestead entry trends; that is, quarter-sections exhibiting a predominant scrub cover tended to be patented much earlier than any of the other three types of vegetative cover. The average length of time to gain patent to quarter-sections that had a predominant scrub, brulé or swamp vegetative cover was practically the same. Wooded areas on the whole tended to take nearly two years longer to patent.



## CHAPTER VII

### THE AGE AND MARITAL STRUCTURE OF THE HOMESTEADERS AND THEIR ASSOCIATION WITH SOME SELECTED VARIABLES

#### Introduction

Isaiah Bowman (1931, p. 1) claimed that the agricultural pioneers who advanced into the uninhabited regions or beyond the fringes of agricultural settlement, tended to be mainly young people with families. This observation is partially true for the homestead entrants who filed homestead claims in the Athabasca study area prior to 1915. The average age of the male entrants who initially entered the study area prior to 1915, was 34.5 years. This figure was calculated from sixty-eight of the eighty-five initial homestead entrants. The age of the initial homestead entrants ranged from eighteen to seventy-two years.

The average age of the homesteaders who entered before 1915 and patented before 1920 varied insignificantly from the average age of the initial homestead entrants: 34.4 years with a range in ages from eighteen to sixty-two years. This average age was calculated on the basis of the age of the entrant at the time the homestead claim was filed and not at the time patent was issued. On the basis of the average age



of the entrants, Bowman's observation that pioneers tended to be "young" may have some validity depending upon one's individual interpretation of "young."

An examination of the marital status of the homestead entrants who filed homestead claims prior to 1915 and patented the quarter-sections prior to 1920, revealed that 51.2 per cent were bachelors. Again this percentage was calculated on the marital status of the homesteader at the time of entry. The remaining 48.8 per cent of those who patented before 1920, had families which ranged in size from two (usually husband and wife) to twelve. A family size of four was the most frequently encountered of those entrants who were married. Contrary to Bowman's observation, the majority of homestead entrants who stayed in the area and patented their quarter-sections before 1920 were unmarried.

Interrelationships between Marital Status Age of Homestead Entrants and Number of Homestead Entrants Prior to 1915 and Number of Patentees before 1920.

It is surprising that the single homestead entrants who patented land prior to 1920, did so in a shorter period of time than the married entrants. The bachelors took an average 4.86 years before patent was issued, as opposed to 5.06 years for the married entrants either with or without families. One family with twelve members, took 6.26 years to patent one quarter-section. Both the minimum and maximum length of time between homestead entry and patent dates were



found among the single-entrant group; 3.11 years and 10.69 years, respectively.

A comparison of the marital status for all homestead entries made before 1915 on an ethnic group basis, reveals that the majority of the entrants between eighteen to twenty-nine years of age were single, (Fig. 7.1). These graphs clearly indicate that young, single men tended to penetrate the uninhabited region in greater number than the middleaged group (forty years plus). The average age of all those who entered the study area prior to 1915, those who patented before 1920, and those who cancelled entries made prior to 1915 are shown in Table 7.1.

TABLE 7.1

AVERAGE AGE OF ALL ENTRANTS (1904-1915), PATENTEES (1904-1920)  
AND ABANDONEES (IF ENTERED BEFORE 1915) FOR FOUR ETHNIC  
GROUPS

Ethnic Group	Average Age of all Entrants	Average Age of all Patentees	Average Age of all Abandonees
Americans	34.4 (N=34)	35.6 (N=10)	30.9 (N=21)
Canadians	32.9 (N=24)	30.7 (N=10)	34.7 (N=12)
British	31.5 (N=17)	29.6 (N= 9)	34.7 (N= 7)
Europeans	33.4 (N=14)	47.0 (N= 1)	34.4 (N= 9)

There is little variation in the average age of those



THE ABSOLUTE NUMBER OF ALL SINGLE AND MARRIED HOMESTEAD ENTRANTS  
WHO FILED PRIOR TO 1915 BY ETHNIC GROUP AND AGE STRUCTURE

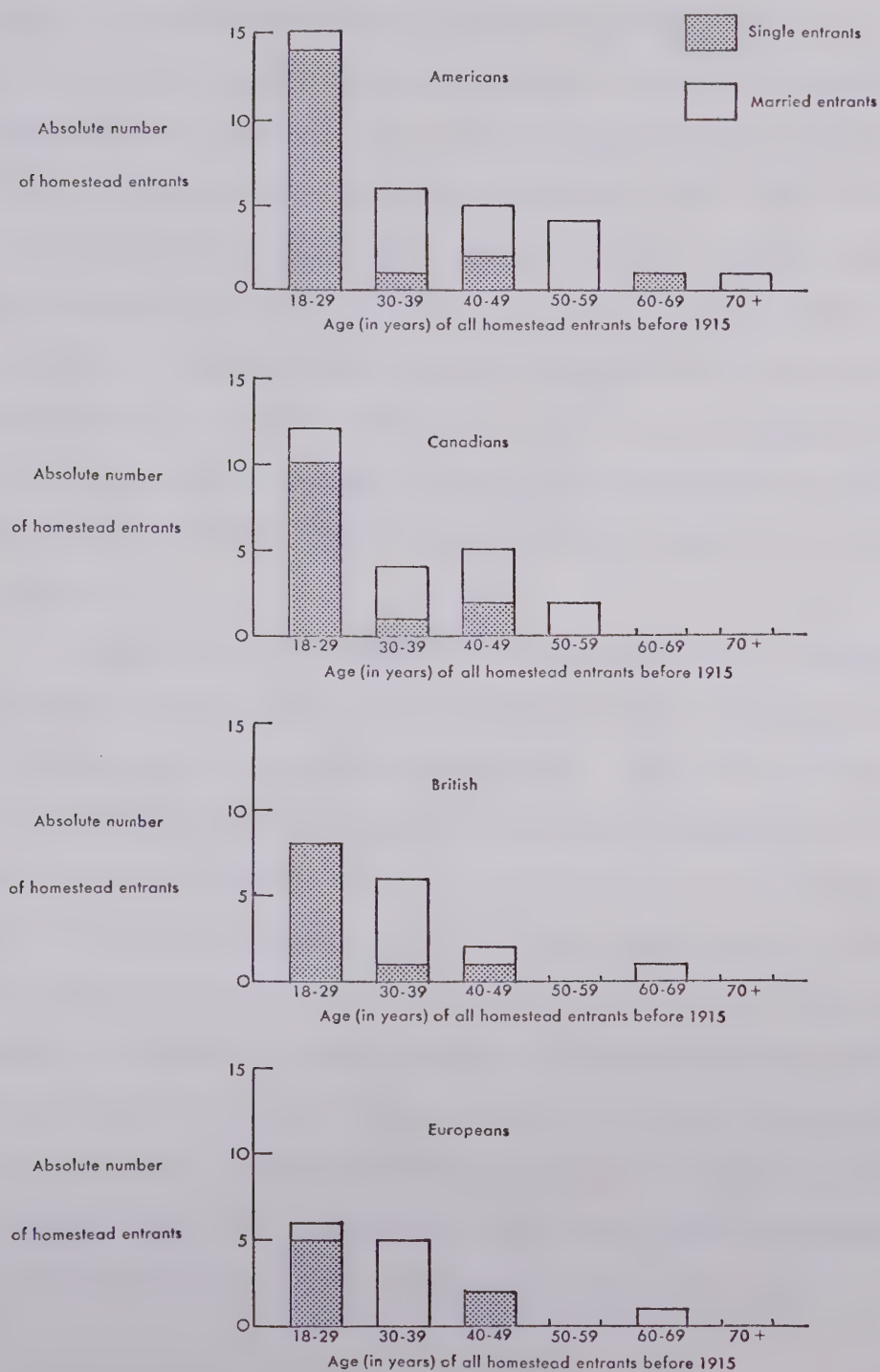


Fig. 7.1



who entered and those who patented. The younger American entrants tended to abandon their claims, whereas the younger Canadian and British entrants tended to patent theirs. One-third of the single American entrants who filed before 1915 had patented before 1920. This compared with 35.29 per cent for the married entrants (usually with families). The rate of patenting by bachelors was higher for the Canadian and British entries, 41.2 per cent and 50.0 per cent respectively. Likewise the married Canadian and British patentee rate was higher; 63.3 per cent of the European bachelors who entered prior to 1915, had patented by 1920, compared with 20.0 per cent for the family unit with two or more members.

A comparison of Figure 7.1 with Figure 7.2 reveals the generally lower rate of patenting by both the Americans and the Europeans. As noted previously, this low rate of patenting by the Americans and Europeans in relation to the number of entries completed, is a reflection of the later arrival of these two groups into an area where most of the better land had already been claimed. It is significant that a greater proportion of the married entrants (usually with families) tended to gain title (patent) to their homesteaded quarter-sections. The difference between the married and the single groups was nonetheless marginal, with the exception of the Canadian group, where the rate of patent



THE ABSOLUTE NUMBER OF ALL SINGLE AND MARRIED HOMESTEAD ENTRANTS  
WHO PATENTED PRIOR TO 1920 BY ETHNIC GROUP AND AGE STRUCTURE

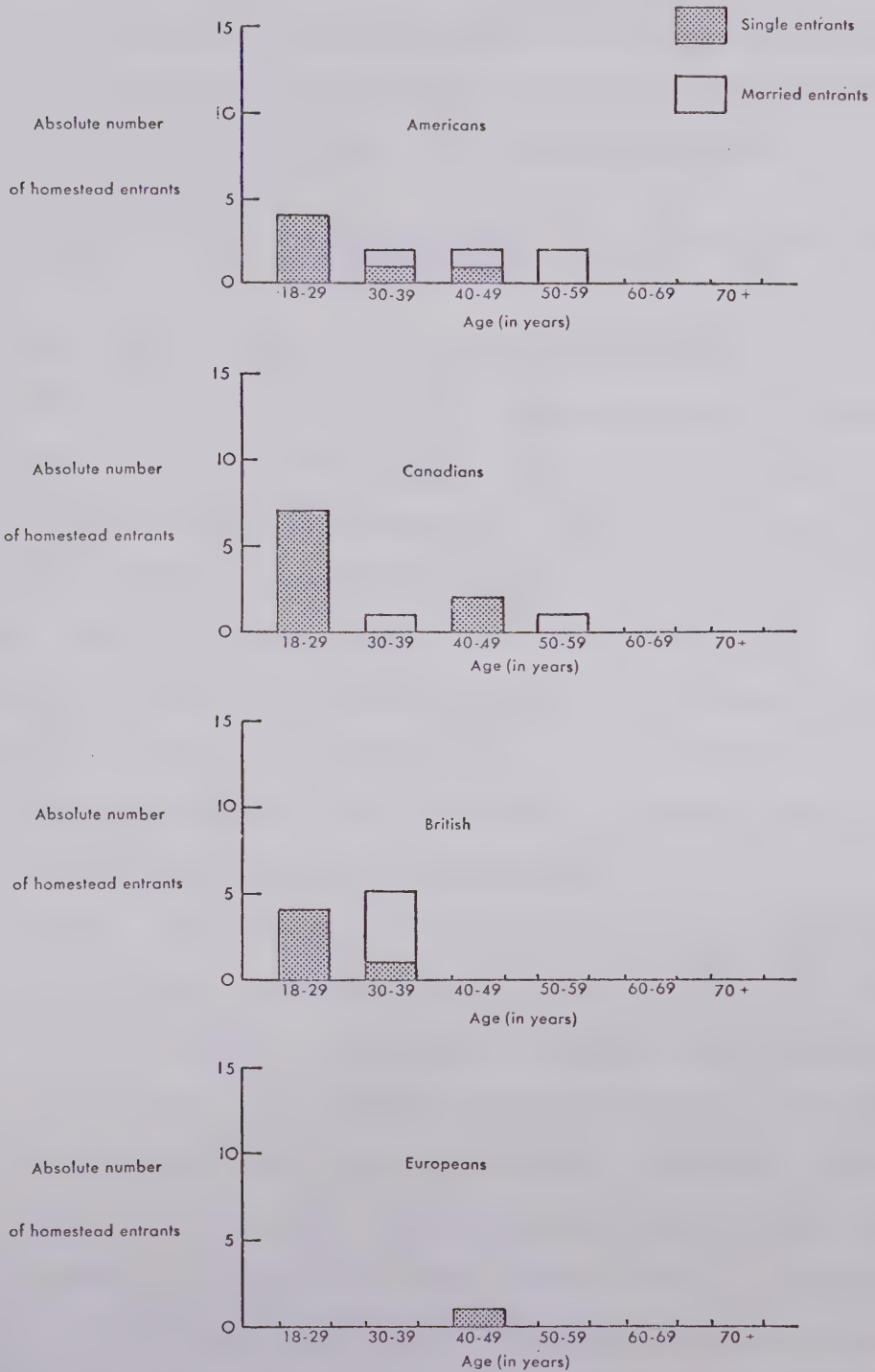


Fig. 7.2



by the larger family unit was 22.4 per cent higher than for the single entrants. When all ethnic groups were considered, 37.0 per cent of the single homestead entrants and 45.0 per cent of the married homestead entrants (usually with families), who had filed prior to 1915, had patented by 1920.

#### Interrelationship Between Family Size, Ethnic Group and Homestead Improvements

In order to gain patent to the homestead, the entrants were required to perform certain homestead duties (Appendix II). The acreage of broken and cropped land, in addition to the value of farmstead improvements was outlined in detail on the "Application for Homestead Patent" form issued to the entrant wishing to gain patent. Two duplicate copies were filled out and sworn to be correct by two neighbouring homesteaders. If the improvements met with the satisfaction of the homestead inspector, and Canadian citizenship had been granted, the homestead was duly patented.

It is interesting to compare the average acreage and value of homestead improvements with family size and ethnic group prior to patent. As noted previously, the average length of time for the single-entrant and married entrants (usually with families) was approximately the same. Assuming the length of time between homestead entry and patent dates are the same, a comparison of the size of family with various aspects of homestead improvements revealed pertinent trends. A limited number of homestead improvements have been chosen to relate with size of family, (Table 7.2).



TABLE 7.2

AVERAGE NUMBER OF ACRES IMPROVED, NUMBER OF LIVESTOCK AND VALUE OF FARMSTEAD IMPROVEMENTS  
FOR HOMESTEADS PATENTED BEFORE 1920, BASED ON FAMILY SIZE

Number of People per Quarter- Section	Average Number of Acres Broken	Average Number of Acres Cropped	Average Number of Horses	Average Number of Cattle	Average Value of the House	Average Value of the Barn
1	30 (N=21)	23 (N=21)	2 (N=21)	3 (N=21)	\$278 (N=22)	\$146 (N=22)
2	30 (N=1)	30 (N=1)	0	0	\$400 (N=1)	\$150 (N=1)
3	18 (N=4)	18 (N=4)	0	3 (N=4)	\$500 (N=3)	\$84 (N=4)
4	24 (N=5)	20 (N=5)	3 (N=5)	9 (N=5)	\$440 (N=5)	\$300 (N=5)
5	22 (N=3)	20 (N=3)	1 (N=3)	3 (N=3)	\$540 (N=4)	\$412 (N=4)
6	30 (N=2)	27 (N=2)	3 (N=2)	9 (N=2)	\$450 (N=2)	\$175 (N=2)
7	30 (N=1)	23 (N=2)	0	0	\$250 (N=1)	\$150 (N=1)
9	39 (N=2)	22 (N=2)	3 (N=2)	4 (N=2)	\$250 (N=2)	\$250 (N=2)
12	50 (N=1)	40 (N=1)	2 (N=1)	2 (N=1)	\$1000 (N=1)	\$400 (N=1)



The single homestead entrants tended to improve more land than those entrants with three, four or five members in the family unit. The average value of the single entrant's house was significantly less than those with families, with the exception of those families seven and nine members in size. The average number of cattle kept by the homesteader did not increase with family size, nor did the average number of horses. Therefore, family size did not have any significant reflection on the amount of homestead improvements made on the quarter-sections claimed.

Off-farm employment was common amongst the single and married homestead entrants. Railway construction, lumbering and mining were the most popular types of off-farm employment. These jobs were taken to provide extra cash in order to make the necessary homestead improvements. Therefore, it is likely that the larger family units (with the exception of the twelve member family) were unable to expend any more than the minimum amount on farm buildings (house and barn). The regulation change regarding value of farmstead improvements in 1912, (Appendix II), may have influenced the average value of house and barn improvements shown in Table 7.2.

It becomes clear from Table 7.2, that mixed farming was beginning to emerge as the dominant type of agricultural activity. Several of the entrants recorded hen houses, milk sheds, granaries, pig pens and fencing as further evidence of farmstead improvements. Most of these out-buildings



were constructed of logs or rough lumber. Fences were built with rails, wire or a combination of both.

Similarly, the houses and barns were constructed of logs and/or sawn lumber. Often the walls were constructed with logs and the roof was of lumber construction (Photo. 7.1 and 7.2).

On an ethnic basis the variation between the average acreage improved is relatively minor, (Table 7.3). The American and Canadian homesteaders tended to have a greater number of horses and cattle than the British. It is difficult to compare the European improvements with the other three ethnic groups because of the limited number (1) of European patentees. This lack of British emphasis on livestock is further reflected in the low value of barn improvements.

### Conclusion

The homestead entrants who entered the Athabasca study area prior to 1915 tended to be young and single. Although the single entrants tended to cancel homestead entries at a greater rate than the married entrants (usually with families), those who stayed patented their quarter-sections somewhat sooner.

The variation in the amount of homestead improvement varied insignificantly amongst the four major ethnic groups. Some minor variation in homestead improvements were discovered when related to family size. Single homesteaders naturally tended to spend less on a home, but appeared to





Original Homesteader's House, (Saddle Style), 1905

Photo. 7.1



Homesteader's House, (Dovetail Style), About 1915

Photo. 7.2



TABLE 7.3

AVERAGE NUMBER OF ACRES IMPROVED, NUMBER OF LIVESTOCK AND VALUE OF FARMSTEAD IMPROVEMENTS  
FOR HOMESTEADS PATENTED BEFORE 1920, BASED ON ETHNIC GROUPS

Ethnic Group	Average Number of Acres Broken	Average Number of Acres Cropped	Average Number of Horses	Average Number of Cattle	Average Value of the House	Average Value of the Barn
Americans (12)	28 (N=11)	24 (N=11)	2 (N=11)	4 (N=11)	\$ 348 (N=12)	\$ 242 (N=12)
Canadians (14)	31 (N=12)	24 (N=12)	3 (N=12)	5 (N=12)	\$ 450 (N=14)	\$ 310 (N=14)
British (11)	23 (N=11)	17 (N=11)	1 (N=11)	1 (N=11)	\$ 375 (N=10)	\$ 51 (N=11)
Europeans ( 1)	30 (N= 1)	30 (N= 1)	2 (N= 1)	0 (N= 1)	\$ 500 (N= 1)	\$ 0 (N= 1)



have improved more land than families varying in size from three to five members.

This brief analysis has provided some background concerning the age structure of the male homestead entrants (prior to 1915), the patentees (prior to 1920) and the relationship between age and rate of patent. Some indication of the average value and acreage of homestead improvements, as they relate to size of family and ethnic groups revealed some minor, but nonetheless significant trends and thereby contributes further to the human aspect of rural settlement.



## CHAPTER VIII

### CHANGES IN THE RURAL SETTLEMENT STRUCTURE

#### Introduction

Thus far this study has concentrated on the colonization phase of rural settlement location. The phases of spread and competition as outlined in Hudson's (1969) theory for rural settlement location, will be examined below. The competition phase will be examined by an investigation of the advance and retreat of rural settlement as determined by the change in the rural population structure and the abandonment of farmsteads. The spread of rural settlement has been related to the areal change in cultivated acreage. The general evolution of a rural settlement pattern, with reference to certain physiographical realities and cultural imprints (roads, railway, etc.) has also been noted.

A brief review of the type of agricultural activity and the change in land use over a twenty-year period (1949-1969) completes this study of rural settlement in the Athabasca area of north-central Alberta.

#### Rural Population Change

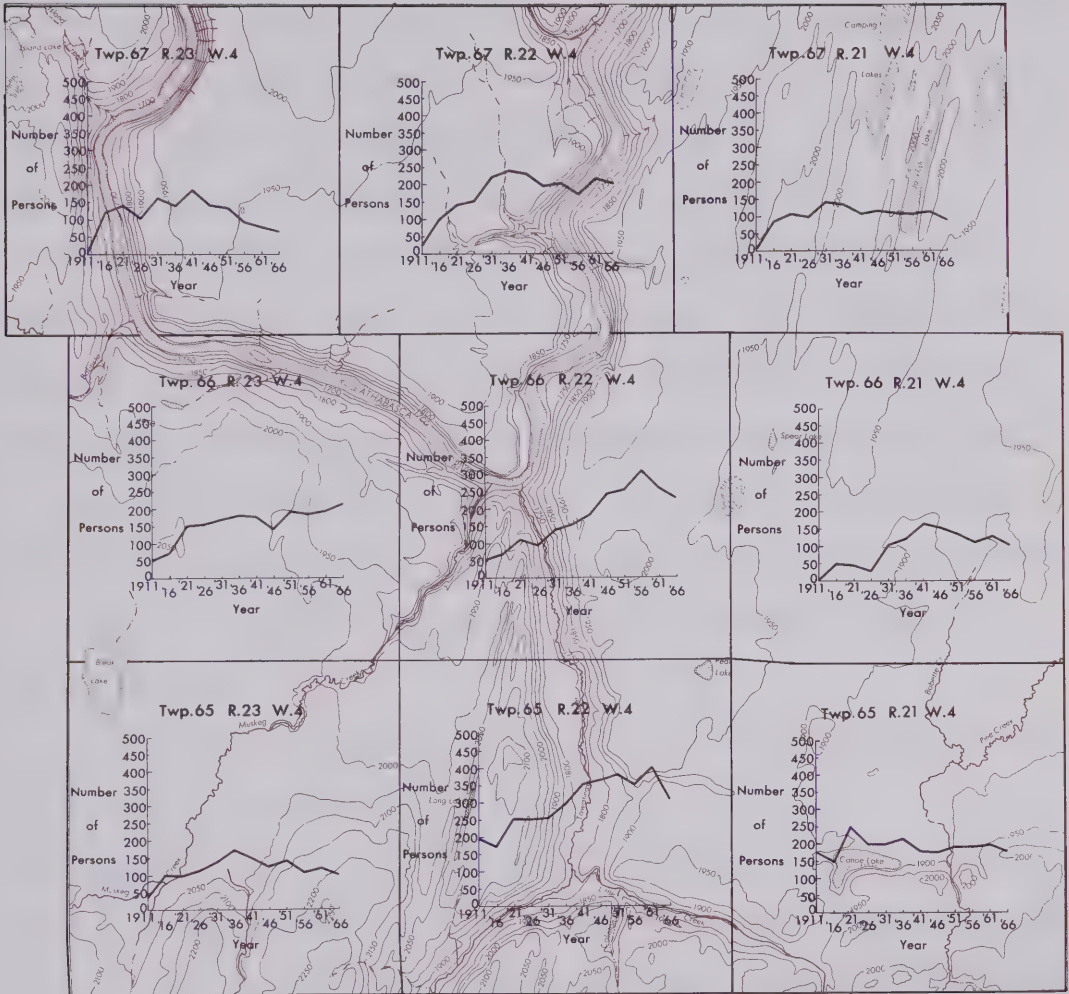
Rural population data were not collected for the study



area until 1911. When the previous census was taken (1906) the area around Athabaska Landing was virtually uninhabited. The change in the population structure for each of the nine townships in the study area is shown graphically on Map 8.1. Within Townships 65 and 66, Range 22, West of the 4th Meridian no distinction was made between the farm population and the non-farm population. Those people living within the hamlet of Colinton in Township 65, Range 21, West of the 4th Meridian and the part-time farm population and non-farm population living within the vicinity of the Town of Athabasca were grouped with the rural population. Therefore, rural population trends for these two Townships are difficult to review in light of the non-farm and part-time farm population bias. Nevertheless, a comparison of the rural population trends within the remaining seven townships (Map 8.1) shows that there has never been a uniform rise or fall in rural population in the study area. Only two Townships (Township 66, Range 21, West of the 4th and Township 67, Range 23, West of the 4th) experienced peak populations during the same census year (1941).

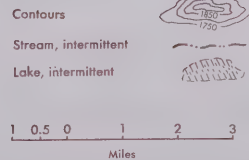
Township 65, Range 21, West of the 4th was the first area to reach a peak rural population (1921). It tended to be one of the first townships homesteaded in the entire study area. Township 66, Range 22, and Township 67, Range 22 showed a substantial rise in rural population during the late 1920's and 1930's. Township 67, Range 21 has maintained a steady population with only minor fluctuations since 1916.





RURAL POPULATION CHANGES ON A TOWNSHIP BASIS BETWEEN  
1911 AND 1966

Source: Report on the Census of the Prairie Provinces,  
1921, 1936, 1946 and the Dominion Bureau of  
Statistics, Population for 1951, 1956, 1961, 1966  
courtesy of the Provincial Planning Branch,  
Department of Municipal Affairs, Government  
of Alberta, Edmonton, 1970.



Map 8.1



Township 67, Range 23, has experienced one of the more drastic rural population declines in the entire study area. With a peak population of 184 in 1941, the 1966 rural population figure was a mere 67 persons. Only Township 66, Range 23, has shown slight rural population increase since 1961.

During the late 1920's and throughout the 1930's a significant movement of Polish immigrants and "dried-out" farmers from southern Alberta and Saskatchewan penetrated the flute fields northeast of Athabasca (Township 67, Range 21, West of the 4th Meridian) and the parcels of predominantly swampy land north and northwest of Athabasca (Townships 67, Range 22 and 23) and east of the townsite (Township 66, Range 21).

The rapid decline in total population within Township 65, Range 22 appears to be solely attributed to the loss of farm population, as the hamlet of Colinton showed an increase of 62 persons between 1961 and 1966 (Personal Communication with Mr. W. Jackson, Provincial Planning Branch, Department of Municipal Affairs, Government of Alberta, Edmonton, 1970). The gradual rise in population in Township 66, Range 22 was partially attributed to the small part-time farm operations and suburban residences lying outside the Town boundary.

Unfortunately detailed demographic data were not available on a Township basis, so any "in-depth" demographic analyses have been curtailed.

#### Active and Abandoned Farmsteads

Although population trends are generally used as an



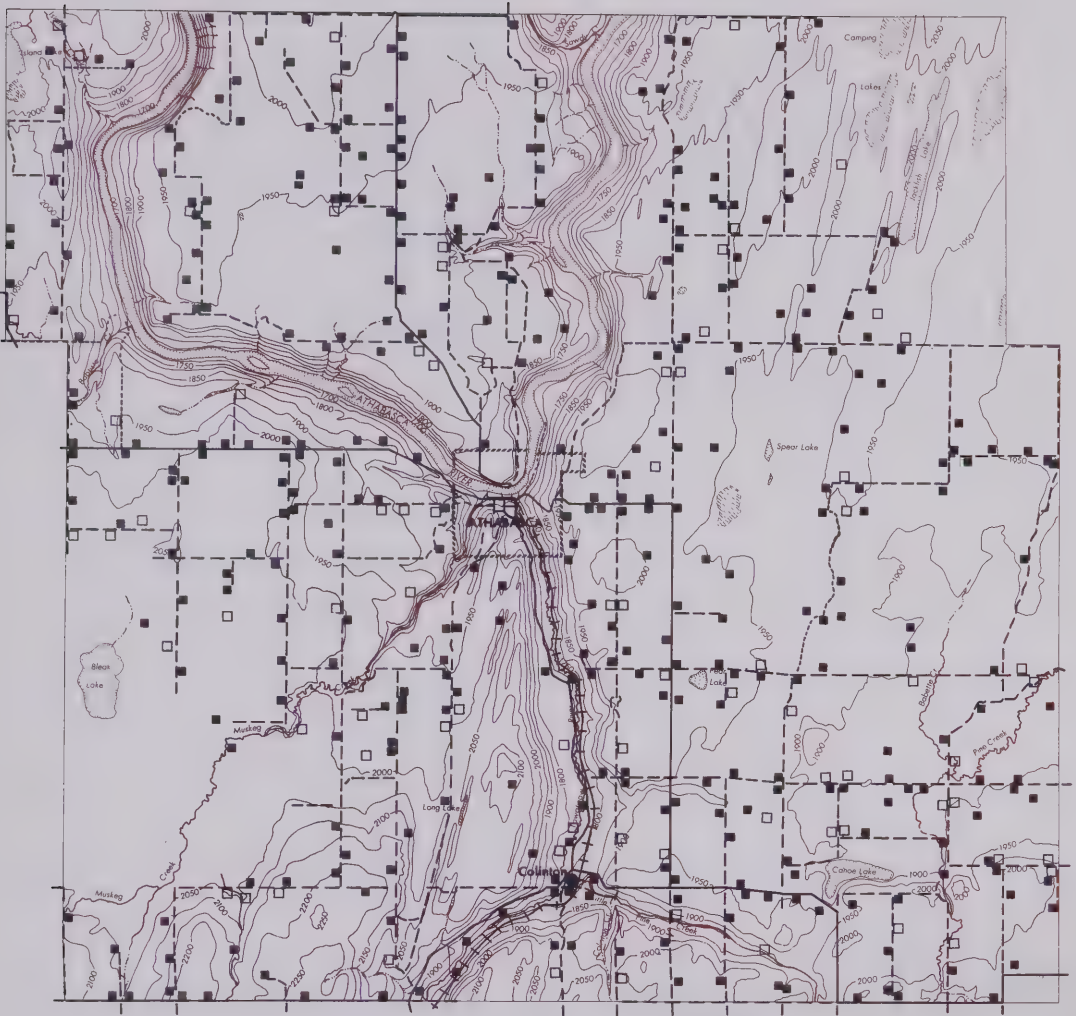
index to determine the advance or retreat of rural settlement, this measurement can be misleading. To fully comprehend the changes in the rural settlement structure, an examination of active and abandoned farmsteads can provide some general indication of land-holding consolidation on an areal basis. Maps 8.2 and 8.3 show the change in the distribution of farmstead sites in the study area for two time periods, 1949 and 1969. Unfortunately, these dates do not correspond with census periods so that any direct comparison of numbers of active farmsteads with rural population data was not feasible. Nonetheless, there has been a significant retreat of farmsteads in certain sectors of the study area between 1949 and 1969. (Table 8.1).

TABLE 8.1

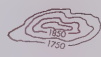


PERCENTAGE DECLINE IN ACTIVE FARMSTEADS  
BETWEEN 1949-1969

Area	Number of Active Farmsteads in 1949	Number of Active Farmsteads in 1969	Percentage Change
Twp.65 R21 W4	50	41	-18.0%
Twp.65 R22 W4	45	35	-22.2%
Twp.65 R23 W4	29	28	- 3.4%
Twp.66 R21 W4	35	29	-17.1%
Twp.66 R22 W4	47	41	-12.1%
Twp.66 R23 W4	44	36	-18.1%
Twp.67 R21 W4	30	22	-26.6%
Twp.67 R22 W4	52	40	-15.3%
Twp.67 R23 W4	40	28	-30.0%
TOTAL	372	300	-19.4%





ACTIVE AND ABANDONED FARMSTEADS, 1949

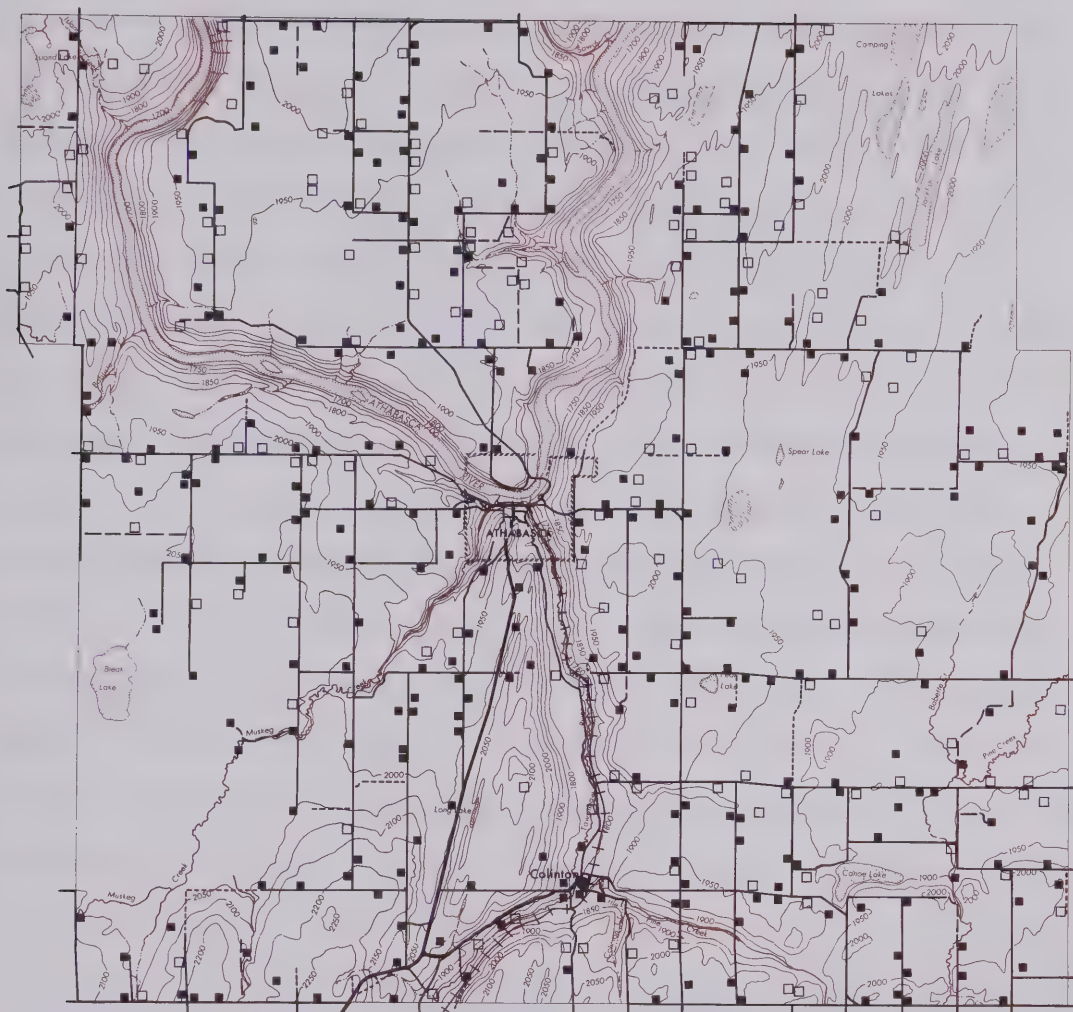
Active farmsteads	■	Contours	
Abandoned farmsteads	□	Stream, intermittent	
Railway: standard gauge	—+—+—+—	Lake, intermittent	
Gravelled roads (graded)	—		
Dirt roads (graded)	- - -		
Trails (ungraded)	- - - - -		
Town boundary	=====		

1 0.5 0 1 2 3  
Miles

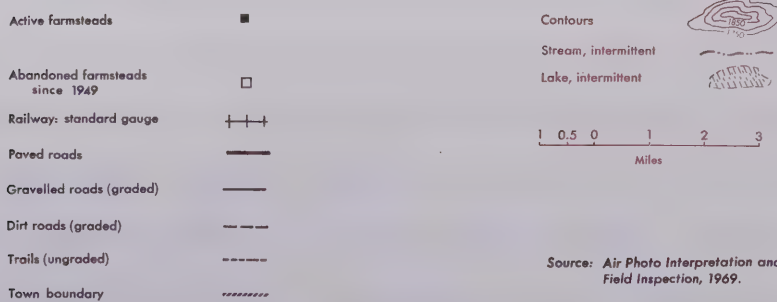
Source: Air Photo Interpretation.

Map 8.2





### ACTIVE AND ABANDONED FARMSTEADS, 1969



Map 8.3



On the basis of the percentage decline in the number of active farmsteads between 1949 and 1969 (Table 8.1), Township 67, Range 23, West of the 4th Meridian showed the greatest number of farmstead abandonments. This rapid decline is attributed in part to the purchase of a number of farms to the west of the Athabasca River by the Hutterite Brethern (who reside outside the study area) but more importantly to the abandonment of farmsteads on the fringes of the large swamp area to the east of the Athabasca River. One of the two townships which recorded over a twenty per cent decline in farmstead numbers was situated within the Tawatinaw River valley and the adjacent flute field and the other township was areally covered with flutes (northeast sector of the study area). Township 65, Range 23, West of the 4th Meridian, showed the least rate of farmstead decline; therefore farm consolidation appeared to be least significant in this area.

#### Changes in the Rural Settlement Pattern

The federal government's homestead policy, which allocated one quarter-section to intending agricultural settlers, had encouraged the evolution of a dispersed rural settlement pattern because the settler was required to build a farmstead on the quarter-section homesteaded. Farmstead improvements and six months' residence on the homestead facilitated the dispersion of individual farmsteads throughout those portions of the study area considered desirable



by the intending settler. Maps 8.2 and 8.3 indicate the dispersed pattern of farmstead location. Physiographical limitations (large swampy areas, steep-sided flanks of river valleys, and flute fields) have interrupted the uniformity of farmstead dispersion throughout the study area.

The distribution of active and abandoned farmsteads for 1949 (Map 8.2) reveals a close association between the farmstead and the road network. For the most part the farmsteads were established adjacent to a road allowance, although there are exceptions. Few new farmstead sites have been developed in the past twenty-years (Map 8.3). However, many (72) have been abandoned as noted previously.

#### The Spread of Settlement

Although it is apparent that rural population has retreated and farmsteads have been abandoned in the study area steadily since the Second World War, at the same time the acreage of improved land has been steadily increasing. A comparison of Maps 8.4-8.6 shows the change in improved acreage between two time periods, 1922-1949 and 1949-1969. The period 1922-1949 showed the greatest rate of land improvement. During the 1920's, tractors had begun to replace horses and mechanized clearing and cultivating equipment had enabled individual farmers to improve larger areas of their land. Between 1949 and 1969 there was a thirteen per cent increase in cultivated acreage. In 1969, some thirty-eight per cent of the entire study area had been improved.

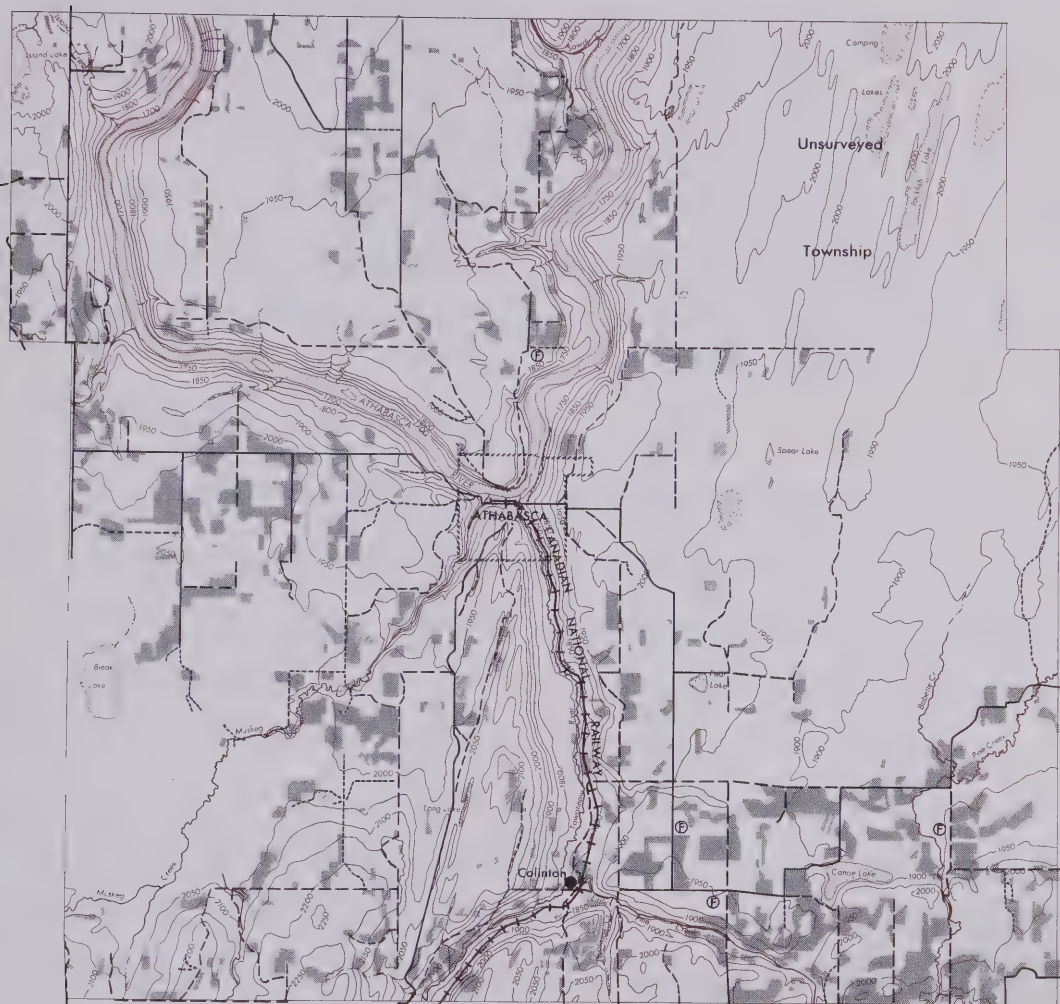


The portion of land initially cultivated by the homesteader was usually within close proximity to the farmstead. Since farmsteads were usually adjacent to the road allowances, the cultivated acreage was likewise closely associated with the road network (Map 8.4). This association is lost by 1949 as cultivated acreage was extended well beyond the road network and farmsteads (Map 8.5).










### The Evolution of the Road Network

Many of the winding roads and trails that existed prior to agricultural intrusion were improved and utilized by the intending homesteaders and early settlers. By 1922, some of these wagon roads and trails were still in existence. However, the grid road network had been well developed by this time (Map 8.4). The Lesser Slave Lake Trail maintained directional orientation north-northwestward from the town of Athabasca. The old Athabaska Landing Trail, had been replaced by a new road to the west of the old Trail; one which attempted to follow a section line (Map 8.4). At Long Lake, the new road joined with the south-southwesterly-oriented Athabaska Landing Trail (Map 8.4). By 1949, many of the portions of the old trails leading into Athabaska Landing from south of the river, were abandoned and road allowances adhered to wherever possible. In the flute fields strict adherence to a grid road network was not practicable. The apex of the flutes provided an excellent natural route for a roadbed.





### GENERAL LAND USE 1922

- Fields 
- Cultivated land 
- Cleared land 
- Unimproved land 
- Railway: standard gauge 
- Good roads (graded) 
- Fair roads (somewhat improved) 
- Poor roads (graded) 
- Town boundary 

- Contours 
- Stream, intermittent 
- Lake, intermittent 

1 0.5 0 1 2 3  
Miles

Source: Land Classification, C.P. Hotchkiss,  
Dominion Land Surveyor

Map 8.4



They were dry, sparsely vegetated and sandy. The occasional road in the northeastern sector of the study area continues to follow the crests of flutes (Map 8.6). Similarly, the new paved highway traverses the crest of a flute, the original route of the Athabaska Landing Trail. The old Trail had fallen into dis-use after the provincial government constructed a gravelled road south of the town of Athabasca along the west side of the Tawatinaw River in the mid-1920's.

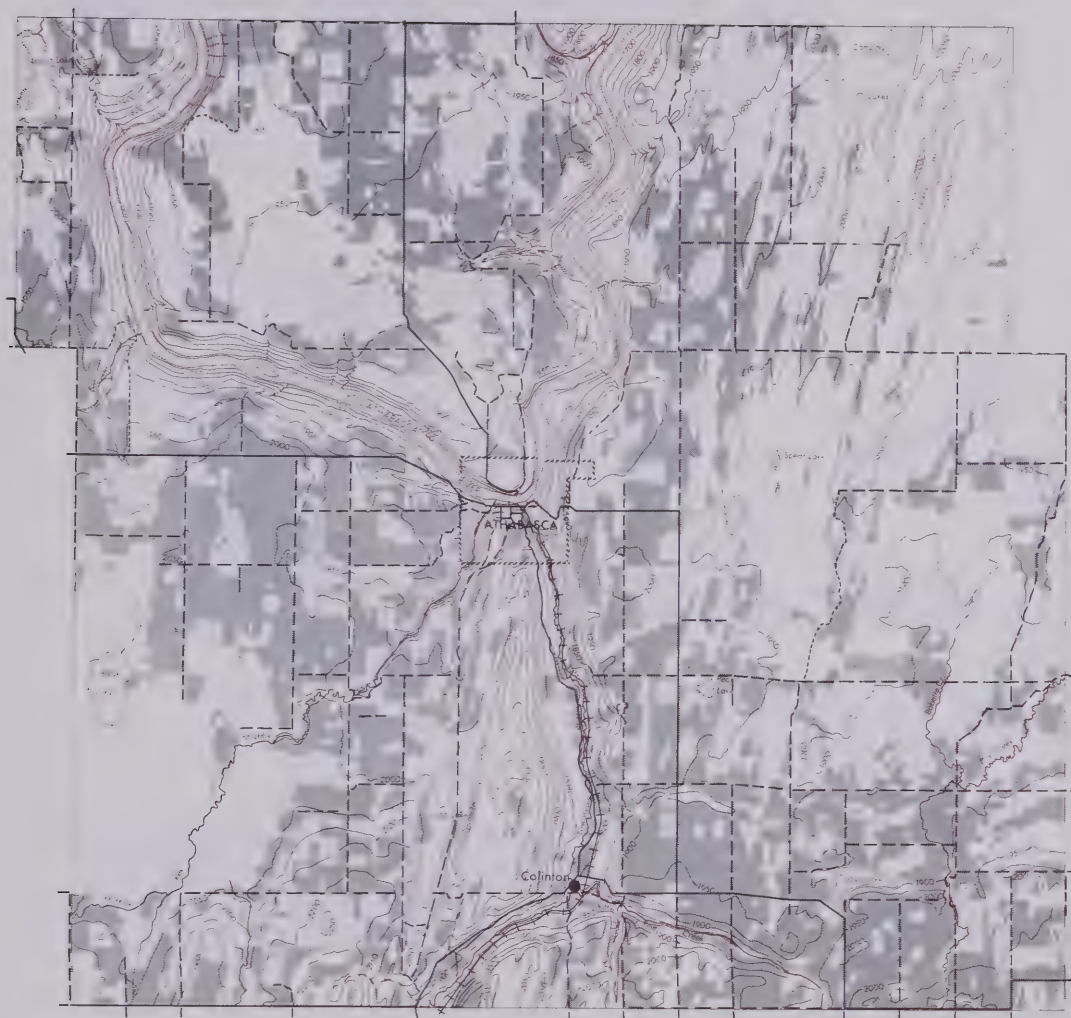
### Agricultural Service Centres

The Athabasca area has always been a mixed farming region and the centres of Athabasca and Colinton have functioned as essentially agricultural service centres. Within the past twenty years, Colinton's role as a trade centre has diminished while Athabasca's has strengthened. The population of Athabasca has more than tripled in the past thirty years (Fig. 8.1). The educational, governmental and service functions of the town appear to have been largely responsible for the centre's continued growth. Retired farmers have tended to gravitate to Athabasca from the surrounding vicinity as well.

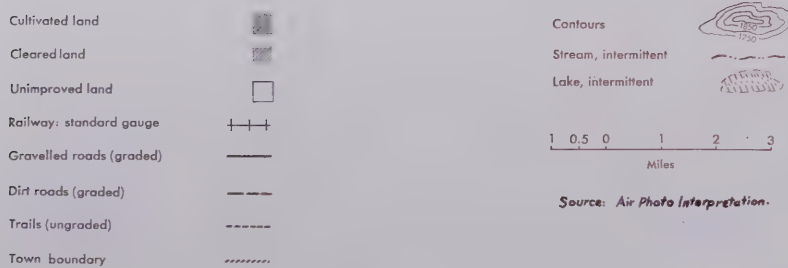
### Conclusions

Agricultural settlement in the study area has experienced a loss of farm population since the Second World War. Farmsteads have been abandoned and land consolidation has taken place. The advance of cultivated acreage into areas



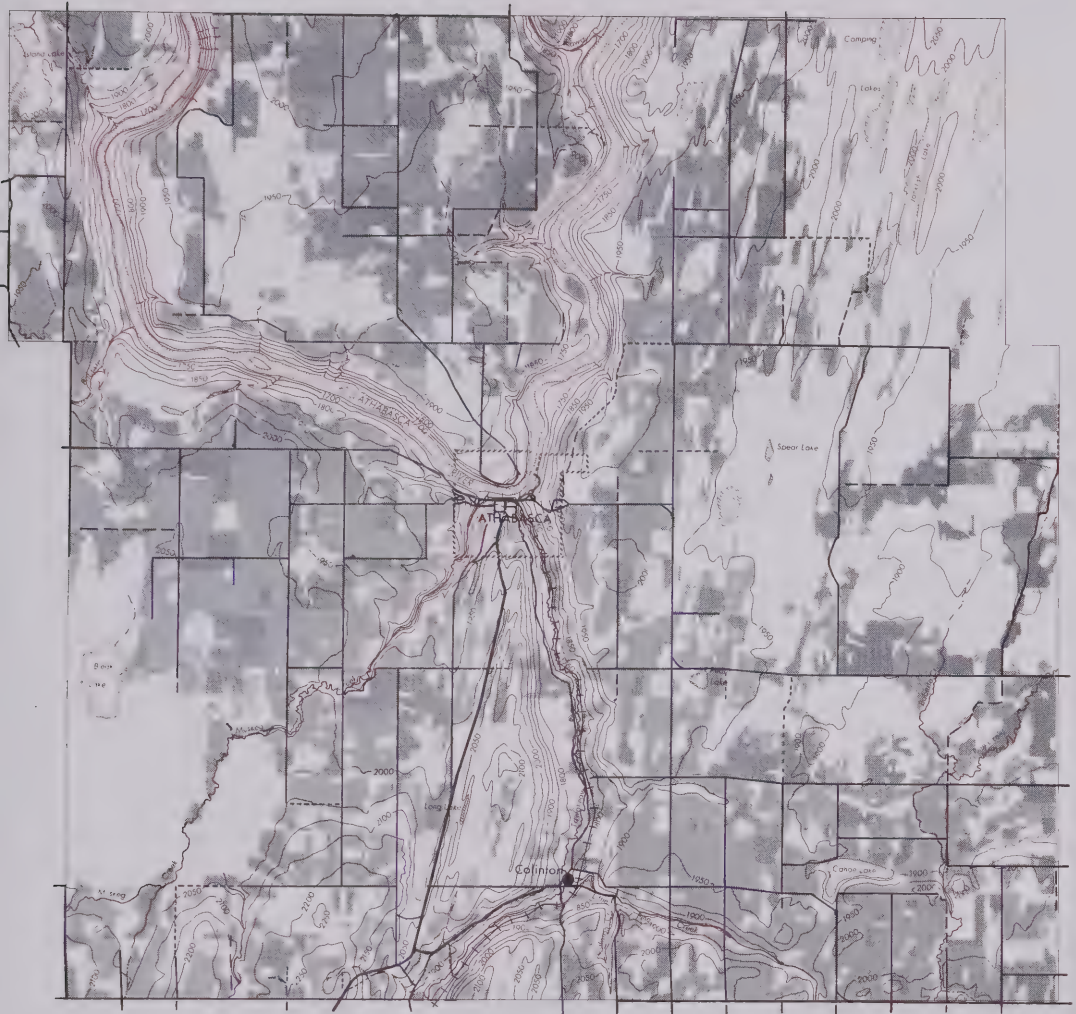


GENERAL LAND USE 1949



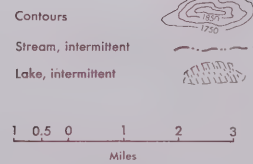
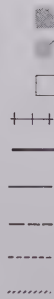
Map 8.5





GENERAL LAND USE 1969

- Cultivated land
- Cleared land
- Unimproved land
- Railway: standard gauge
- Paved roads
- Gravelled roads (graded)
- Dirt roads (graded)
- Trails (ungraded)
- Town boundary



Source: Air Photo Interpretation and Field Inspection, 1969.

Map 8.6



POPULATION CHANGE IN THE TOWN OF ATHABASCA

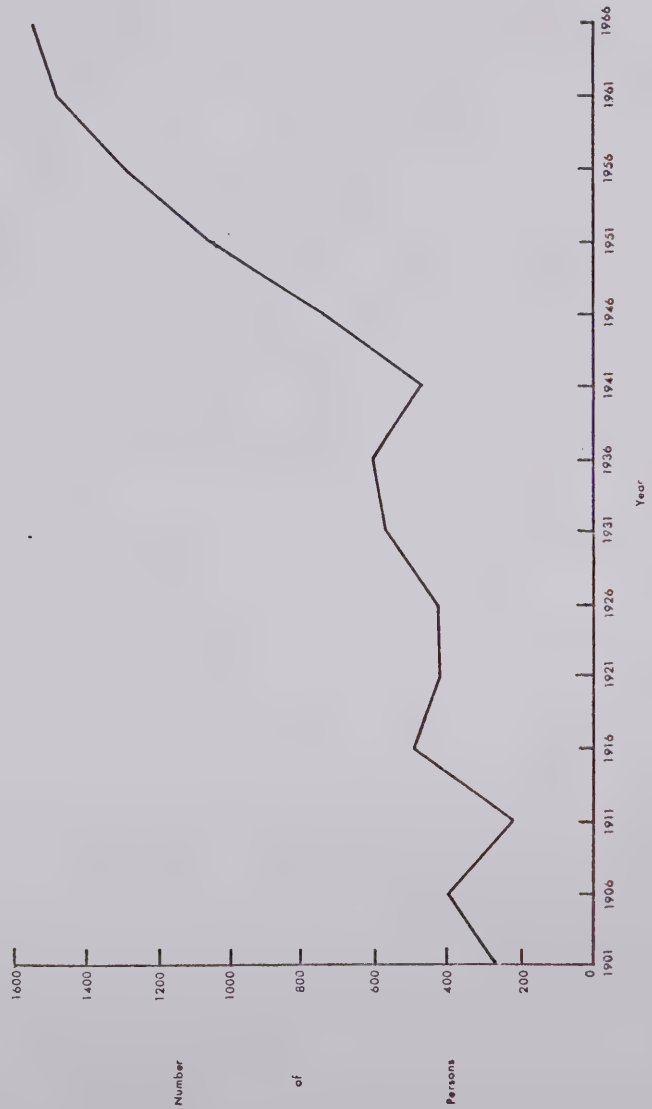


Fig. 8.1



considered undesirable (swampy areas) by the early settlers provides evidence of a continually advancing agricultural frontier.

The pattern of settlement has traditionally been dispersed. The grid road network has been super-imposed in most sectors of the study area. The crest of a flute is occasionally traversed, and water courses, water bodies, and swampy areas interrupt the basic grid road network.

With the exception of the angular field patterns on the flanks of the flutes, and the odd-shaped fields caused by the interruption of sloughs and swamps, the general field patterns have usually been square or rectangular in the study area.



## CHAPTER IX

### CONCLUSIONS

This rural settlement study has focused upon the process of initial agricultural colonization within a 324 square mile area in north-central Alberta. The central theme of the study dealt with the influence that selected spatial (distance to various pre-agricultural cultural features) and environmental (vegetative cover and soil types) factors had upon the process of rural settlement during the initial homesteading period, 1904 to 1915. The quarter-section provided the basic unit for evaluating the influence that these two sets of variables had upon the time of homestead entry. The number of quarter-sections chosen for examination was determined by taking a ten per cent random sample of the entire study area. This sampling method permitted a detailed examination on a quarter-section basis of the homestead entry and abandonment dates, the patent dates, the ethnic and age structure of the homestead entrants, and the value of homestead improvements prior to patenting. A linear correlation analysis was applied between the time of initial homestead entry onto a particular quarter-section and the distance to the various cultural features (Athabaska Landing, The Athabaska Landing Trail, the nearest wagon road or



trail, and the nearest railway depot) and the number of acres of each of the four types of vegetative cover. This statistical technique provided a method of measuring which factors tended to have the greater influence upon the initial land claiming process within a former uninhabited area. The strength of these associations between the dependent variable 'time of initial homestead entry' and the various independent variables were expressed as linear correlation coefficients: a measure considered particularly appropriate when attempting to discover whether there was a progressive movement of settlers outwards from the pre-agricultural cultural features (i.e. Athabaska Landing, Athabaska Landing Trail, etc.) and the degree of influence that the location of these features had upon the initial homesteaders locational decisions. Similarly, the degree of association between the number of acres of the four major types of vegetative cover was measured statistically by utilization of the linear correlation technique. The evaluation of soils on a quarter-section basis was based on the predominant areal coverage of one of the five major soil orders. Accurate areal measurement was not feasible because the soil data available for the study area had been highly generalized. Therefore, the dominant soil order was selected and a rank-order correlation was performed between 'time of initial homestead entry' and the five great soil orders which were ranked on a one to five basis from the most desirable soil order (chernozem) to the least desirable (organic).



An investigation into the age, and the ethnic and marital backgrounds of the initial and subsequent homestead entrants provided a basic description of the type of pioneers who homesteaded land in the study area. These variables were either directly or indirectly related to a selected number of independent variables (time of initial homestead entry, abandonment dates, patent dates, type of vegetative cover and homestead improvements prior to patenting) on a simplified statistical basis (absolute frequencies and percentages). The size of the sample restricted the utilization of any sophisticated statistical techniques.

The changes in the rural settlement structure in terms of population trends, farmstead abandonment and changes in cultivated acreage were briefly noted in an attempt to account for the form and pattern of rural settlement in the Athabasca area at different time periods.

The results of this study indicate that of all the environmental and spatial variables considered for an evaluation of the process of initial rural settlement in the Athabasca study area, the type of vegetative cover (an environmental variable) tended to be the most influential locational determinant. There was a pronounced preference for scrubland over brulé, swampland or woodland. The number of acres of scrubland correlated higher with 'time of initial homestead entry' than any of the other types of vegetative cover. The better soils (chernozems and luvisols) tended to be settled earlier than the poorer quality soils (brunisols, gleysols,



and organic soils). However after 1911 those quarter-sections exhibiting predominantly organic soil development were claimed along with parcels of land showing predominately luvisolic soil development.

Of all the spatial (distance) variables considered, distance to the nearest railway depot (Athabaska Landing or Colinton) correlated stronger with 'time of initial homestead entry' than any of the other distance variables. The correlation between time of 'initial homestead entry' and distance to the nearest wagon road or trail appeared to be the second most important time-distance association. Somewhat weaker associations were discovered between time of initial homestead entry and distances to the southern boundary, to Athabaska Landing and finally to the Athabaska Landing Trail. Although all the distance-time of initial homestead entry associations were positively correlated, the strengths of any of the associations were not as great as for the one type of vegetative cover that is, scrubland. Nonetheless, there was generally a progressive penetration of rural settlement northward (the relationship became particularly strong once those parcels of land north of the Athabasca River were evaluated). Rural settlement generally tended to penetrate concentrically outwards from Athabaska Landing and radially from the Athabaska Landing Trail. The major reason for the lack of a stronger correlation between time of initial homestead entry and distance to Athabaska Landing, was the fact



that the scrub-covered lacustrine plain east of Colinton tended to be one of the earliest areas to be settled. Consequently there were two separate nodes from which agricultural settlement appeared to penetrate: outwards from a small area on the lacustrine plain east of Colinton and outwards from Athabaska Landing. The main transportation artery prior to agricultural settlement, the Athabaska Landing Trail was the least influential as a cultural attraction. The Trail's position in the study area (on the crest of a flute and adjacent to the rough and broken slopes of the Tawatinaw River valley) seems to have been largely responsible for failing to attract the early homesteader.

The importance of vegetative cover as the primary locational determinant during the initial settlement period is clearly indicated when a comparison of time of initial homestead entry and type of vegetative cover are compared on an ethnic basis. The Americans who were proportionately the largest ethnic group to enter the study area between 1904 and 1915 generally entered later than either the Canadian or British-born homestead entrants who tended to claim the predominantly scrub-covered parcels of land because they were the earlier entrants. Once the attractive scrubland had been claimed for those who entered about the same time (1911), there was an apparent tendency for the British-born to file onto woodland, and the Americans to claim swampland. The American and European homesteaders tended to register a higher rate of abandonment and subsequently patent rates were



lower for these two major ethnic groups than they were for either the Canadian or British-born settlers.

The rate of patenting by the single homestead entrants was somewhat lower than the married entrants. However, the single men tended to improve more land and those who did patent the land tended to do so much sooner than the married entrants. The variation in the value of homestead improvements was insignificant on both an ethnic and marital basis.

There has been a considerable loss of rural population in the study area since the Second World War. A 19.5 per cent (72) decline in the number of farmsteads between 1949 and 1969 indicates that farm consolidation has been prevalent since the Second World War, and during the 1960's this trend has been particularly accentuated.

The rural settlement pattern in terms of the arrangement of farmsteads is areally dispersed with the obvious absence of farmsteads in the massive swampy areas, in certain portions of the flute fields and on the rough and broken slopes of the major river valleys. The farmsteads tend to lie along the grid road network.

The spread of agricultural settlement in terms of the increase in cultivated acreage continues to penetrate the former woodlots, swamp margins and flute flanks. The field patterns are generally rectangular or square. However, they adhere to the orientation of the flutes in certain portions of the study area. Very poorly drained swamps and excessively steep ridges have resisted cultivation.



An investigation into the process of initial rural settlement and the changes in the form and pattern of the rural settlement structure over given periods of time within the Athabasca study area was largely governed by the historical data available for the area. The homestead records, the Dominion Land Surveyor's Notebooks and the Preliminary Soil Survey map of the Tawatinaw Sheet (83-I) provided the most important sources of information for the analysis of the process of initial agricultural colonization. Interviews with early homesteaders in the area provided the author with a feeling for the region at the time of initial agricultural settlement.

This study has by no means exhausted all the factors operative in the process of initial rural settlement. Nonetheless, an attempt was made to select a varied array of spatial, environmental and human variables that would shed some light on the process of rural colonization. If the importance of each of these variables was to be accurately assessed, wherever and whenever feasible, the application of such statistical techniques as linear and rank-order correlations, could generally provide a basis for arriving at certain conclusions regarding the process of initial agricultural settlement. This statistical approach is not only useful in its own right but also in terms of comparing colonization processes in other regions. Such an approach has previously been little used in rural settlement studies.



However, this study suggests that such an approach has merit when trying to account for the factors responsible for rural settlement location.



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INTERVIEWS WITH EARLY SETTLERS  
OF THE ATHABASCA DISTRICT

Mr. Irwin Bausman  
Mr. Hugo Carlson  
Mr. H. Cook  
Mr. Arthur Cullen  
Mr. & Mrs. Sam Goodwin  
Mr. Bert C. Hart  
Mrs. Bill Hay  
Mr. Andrew Kavalok  
Mr. Martin Labouski  
Mr. Charles Lynch  
Mr. Thomas Mapp  
Mr. & Mrs. Bryce Minns  
Mrs. William Minns  
Mr. Alex Moulin  
Mr. Henry Patre  
Mr. Tom Plumley  
Mr. Tod Richards  
Mr. Ernest Sparr  
Mr. William Watson  
Mr. Reiner Whitely  
Mrs. Jettie Wiley



MAPS

National Topographic Series: 1:50,000

Athabasca Sheet 83I/11 East Half

Athabasca Sheet 83I/11 West Half

Sawdy Sheet 83I/12 East Half

Sawdy Sheet 83I/12 West Half

Grosmont Sheet 83I/13 East Half

Railway Land Map, R. E. Young, D. L. S.  
Glenbow Foundation Archives, Calgary.



PHOTOGRAPHS

Aerial Photographs, Air photograph collection of the  
Department of Geography, University of Alberta.

1949 - Scale: 1 inch to 3333 feet

<u>Photo Flight Line</u>	<u>Contract No.</u>	<u>Photo No's.</u>
5410	1328	10-19
5411	1329	16-24
5412	1329	17-24
5413	1329	1-9
5414	1329	2-9
5415	1330	21-28

1968 - Scale: 1 inch to 2640 feet

5413	YC1548	162-173
5414	YC1548	214-224
5415	YC1552	6-15
5416	YC1552	160-171
5417	YC1552	121-132
5418	YC1552	47-58
5419	YC1552	83-94

The Ernest Brown Collection, Courtesy of the Provincial  
Archives, Edmonton.



## APPENDIX I

The Following Pamphlet Has Been Prepared and  
Printed by the Publicity Committee of  
the Board of Trade for General Distribution

### GO TO ATHABASCA LANDING

Where is Athabasca Landing?

What is Athabasca Landing?

Why should you be interested in Athabasca Landing?

By dividing the Province of Alberta into Northern and Southern districts it will be found that Athabasca Landing is situated just twenty-five miles north of such a divisional line, and on the Athabasca River. This natural position makes Athabasca Landing the entrance to the north country either by trail or waterway. All roads to the north and the famous "Last Great West," commence at Athabasca Landing and in a very short time steel rails will also run northward and westward from here. The eyes of the entire world are at present turned to western Canada in general and Alberta in particular and more particularly to Northern Alberta. Why is this district receiving so much attention? Because the incoming agriculturalists and ranchers are looking for homes, the capitalists for new fields of investment, the prospectors for new undeveloped territory, the manufacturers for new markets, the wholesalers for new distributing centres, the tourists for new scenes of wild grandeur, the



laborers for steady employment, the farm hands for opportunities to obtain the fundamental principles of successful farming, the younger people for a young country and the older people for pleasant climate. All these classes will find such opportunities in Athabasca Landing and immediate vicinity. Are you not included in one of the above classes? If not write the Secretary of the Athabasca Landing Board of Trade for any information desired.

Dominion Land Surveyors are already going into the country on all sides of Athabasca Landing for the purposes of sub-dividing, and by the end of the summer thousands of additional homesteads will be available. Within a radius of twenty-five miles of here nearly two thousand homesteads are available at the present time. The intending settler who prefers prairie land can obtain unexcelled prairie land just east and south of Athabasca Landing--land that is well watered with streams and small lakes. Settlers preferring land of brush and prairie can obtain such land west and north of Athabasca Landing.

There are several valleys in the district that are especially adapted to mixed farming, the rolling nature of them affording excellent pasture for cattle. During the greater part of the winter cattle can forage for themselves, it being necessary to feed hay only periodically.

Owing to the fact that the greater part of this district has been surveyed only within the last couple of years, great opportunities are offered to parties of settlers desir-



ing to locate in close proximity to one another thus forming colonies.

Practically all the small streams in this district have, growing along their banks, good patches of building timber.

Seeding was commenced this year in March--grain has been sown here the last week in May and fully matured and ripened before the first frost of fall. This is a long range of seeding time.

#### A Crop Has Never Been Destroyed by Hail in the Landing District

Sheep and hog raising is being carried on by some farmers in this district with big success. These farmers are steadily going in for this business more extensively as it is found very profitable. Poultry raising and dairying are found to be very profitable.

The next few years will see great activity in railroad construction in this district. The A. & G.W. railway to the east of here is already under construction. Construction work will soon commence on the Edmonton-Athabasca Landing Branch of the Canadian National Railway. This line will in the near future be extended to Grande Prairie and Ft. Vermillion. This work means a ready market for the farmers grain and good employment between seeding and threshing times.

This is the opportune time for entering this northern district. There are still large numbers of excellent home-



steads available, close to ready markets and near to the railway line now under construction.

At Athabasca Landing we have a subagency of the Edmonton Land Office and all entries for homesteads may be made with the least possible delay.

We also have an official land guide to take intending settlers around the country.

Owing to the number of incoming settlers, a Commodious Immigration Hall has been erected here this month, and is now available to all intending settlers. Newcomers will be able to make this their headquarters while they are looking around for a suitable location.

The trek to the northern homesteads commenced the first of the year and promises to far exceed all previous records.

The number of new settlers since the first of the year, to date, far surpasses all previous years for the same period.

Join in the "Northward Trek" at once! Do it now!

Write the Secretary of the Board of Trade, Athabasca Landing, for any information desired."



## APPENDIX II

### SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

"Any person who is the sole head of a family, or any male over 18 years old, may homestead a quarter-section of available land in Manitoba, Saskatchewan or Alberta. The Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by Proxy, may be made at any agency, on certain conditions for father, mother, son, daughter, brother or sister of intending homesteader.

Duties--six months residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least seventy acres, solely owned and occupied by him, his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties--must reside six months in each of six years from date of homestead entry including the time required to earn homestead patent and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may take a purchased homestead in certain district."



## CHANGES IN THE HOMESTEAD ACT

"Mr. W. J. Stafford, Dominion Lands Title Officer, received word from Ottawa of an important change in the homestead regulations which should make it easier for a man without money to prove up his claim.

"Hitherto residence was counted in three ways:

1. From the date of entry.
2. From the date of commencement of residence.
3. For three periods of six consecutive months within three years.

"By the new regulation the officials are permitted to change the commencement dates, so that a man could, for instance, reside on the homestead in April, May, June and July.

"He might be short of money, and have to leave for a couple of months. In the past, if he left the four months would not count. Now, he can return and put in November and December, and the officials can make the count so that the time put in would count, providing there was no overlapping. The change should prove helpful, for in the past many a man has lost three or four months, owing to his being absolutely compelled to leave to earn money to live on.

"In future, a homesteader, who lives with his parents or some immediate member of his family, within nine miles of his homestead will not have to build a house. In the past he had to build a house worth \$300.

The homesteader, who lives on his homestead, is re-



quired to build a 'habitable house.'" (Northern News, June 12, 1912, p. 2).

"No Cancellation of Homesteads in Winter."

". . . no homestead entries are to be subject to cancellation during the winter months prior to the first of April.

"The object of the new regulation is to enable settlers to go off their homesteads during the winter without danger of their homesteads being cancelled in their absence.

"Hardship has been wrought in some cases where a man has been away from his homestead earning money during the winter and has not been able to get back just in time to fulfill the regulations regarding six months residence." (Northern News, January 25, 1913, p. 5).

















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Abstract -  
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113-180

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